

## Motivating Students to Engage in Learning: The MUSIC Model of Academic Motivation

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The purpose of this article is to present a model of academic motivation that can be used by instructors to design courses that will engage students in learning. The model, based on research and theory, consists of five components that an instructor should consider when designing instruction: (1) empowerment, (2) usefulness, (3) success, (4) interest, and (5) caring. In this article, I describe the components of the model by discussing the key concepts of the components, summarizing the background research and theories that support the importance of the components, and providing questions, suggestions, and examples that instructors should consider when designing instruction. My hope is that novice, as well as experienced, instructors will find this model and the associated suggestions and examples useful as a reference tool to which they can refer when designing instruction.

Although students enroll in courses for a variety of reasons, and some students have more initial interest in course topics than others, the *design* of a course is the key to whether or not students are motivated to engage in learning during the course. But what can instructors do to design courses that will motivate students to engage in learning? In this article, I provide answers to this question by presenting the MUSIC model of academic motivation. The usefulness of the MUSIC model is that it specifies five key components that can guide instructors in making *intentional* decisions about the design of their courses based on current research and theories in the field of motivation.

As an educational psychologist, I teach courses and conduct research related to motivation, teaching, and learning. When faculty members in other disciplines ask me about what they can do to motivate their students, I try to give them a few suggestions. But when they ask for more information that they can read and apply to their courses fairly quickly, I have difficulty locating appropriate resources for several reasons. First, the field of academic motivation is divided into many “mini-theories” that can make it difficult for instructors to discern which ones are most relevant to their teaching. For example, Reeve (2005) includes 24 motivation theories in his book. Second, because some researchers define motivation concepts differently than others (Schunk, 2000), it can be difficult for individuals unfamiliar with the field of motivation to readily understand and apply research results. This problem is compounded by the fact that similar motivation concepts are often labeled with different names (e.g., expectancy and self-efficacy). Finally, much of the research has been more theoretical than applied, which is appropriate for scholars in the field of motivation but not for instructors seeking practical advice.

My aim in the present article is to address these access barriers by summarizing the major tenets of academic motivation in a manner that is understandable

to instructors in any academic discipline. I include many practical suggestions and examples that instructors can consider when designing their courses. I did not want to write a “dumbed-down” article that would present the reader with a checklist of things to do to motivate students because instructors must understand *why* they are using particular instructional strategies. When instructors do not understand the theory behind the strategies, they are more likely to implement them incorrectly. Consequently, I provide some background research and theories for each component of the model. My hope is that novice as well as experienced instructors will find this model and the corresponding suggestions and examples useful as a reference tool to which they can refer when designing instruction.

### Academic Motivation

Psychologists have conducted research and developed theories of motivation to explain the behavior of individuals. In the present article, I focus on the research and theories that are most applicable to students in academic settings, and thus I intentionally use the term “academic” motivation to describe the model. Certainly, much of the research and many of the theories upon which the model is based can also apply to a wider range of behaviors, such as those demonstrated in athletics and work environments.

I define academic motivation in a manner consistent with Schunk, Pintrich, and Meece (2008) in which motivation is a process that is inferred from actions (e.g., choice of tasks, effort, persistence) and verbalizations (e.g., “I like biology.”), whereby goal-directed physical or mental activity is instigated and sustained. Academic motivation is not important in and of itself, but rather it is important because motivated students tend to engage in activities that help them to learn and achieve highly in academic settings. For

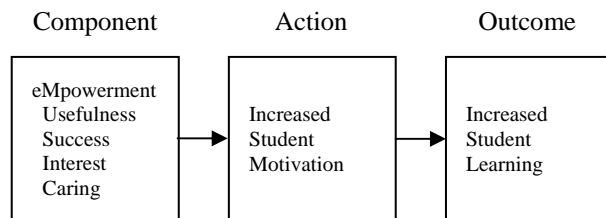
instance, motivated students are more likely to pay attention during course activities, take the time to use effective learning and study strategies, and seek help from others when needed (Schunk et al., 2008).

### The MUSIC Model of Academic Motivation

The MUSIC model of academic motivation consists of five components that an instructor should consider when designing instruction: (1) empowerment, (2) usefulness, (3) success, (4) interest, and (5) caring. The name of the model, MUSIC, is an acronym based on the second letter of “eMpowerment” and the first letter of the other four components. I derived each component of the model from research and theory in areas such as education and psychology. Although researchers have learned quite a bit about what motivates individuals, much of this research has been conducted outside of higher education classrooms. Therefore, to provide a model based on the latest research and theory available, I examined research and theories from within and outside of higher education.

My contribution in developing the MUSIC model is primarily in analyzing, evaluating, and synthesizing motivation research and theory into one cohesive model. I include the five components together in one model because research and theory indicate that when instructors foster one or more of these components, students are more motivated to engage in their learning, which results in increased learning (see Figure 1). This model is based on a social-cognitive theoretical framework that specifies that students have psychological needs, that characteristics of the social environment affect how these needs are met, and that satisfying these needs affect their perceptions and behaviors.

Figure 1  
A Model, based on a Social-Cognitive Theoretical Framework, in which Five Components Lead to Increased Student Motivation, Resulting in Increased Student Learning



I cannot recommend an exact number of components that must be met for students to be motivated in any particular course, and I have no evidence that all five model components are required

for students to be motivated. However, research indicates that some of these components are highly correlated in some contexts (e.g., Kaufman & Dodge, 2009), that more than one component can be used to explain a student’s motivation (e.g., Griffin, 2006; Walker, Greene, & Mansell, 2006), and that the components can work together to produce higher levels of motivation than when implemented alone (e.g., Simons, Vansteenkiste, Lens, & Lacante, 2004). Thus, I contend that the more that instructors can do to address all five of the components, the more successful they will be in motivating all of their students. Lastly, I have no reason to believe that these components are less important for online courses than for traditional face-to-face courses.

In the following sections, I describe the components of the model by: discussing the key concepts of the components, summarizing the background research and theories that support the importance of the components, and providing questions, suggestions, and examples that instructors should consider when designing instruction. The section titles for the components begin with the word “Design” because instructors can *intentionally design* learning environments to foster students’ motivation. The design might not work perfectly for every student, but research and theory indicate that the five components of this model are important to students’ motivation. The questions listed in the *Design* sections are intended to provide instructors with questions that they should ask themselves before, during, and after a course (if they plan to teach it in the future). The suggestions in the *Suggestions* sections are strategies that instructors can implement to address the questions. Some suggestions are more appropriate for some courses than others, depending upon how they fit with other course activities and how they allow students to meet the course objectives. Although some of the suggestions and examples have been researched in higher education settings, this is not the case for all of them. However, all suggestions and examples are supported by theories that were developed through research. A positive outcome of this article would be that it stimulates research in higher education related to these components, questions, suggestions, and examples.

### Design for eMpowerment

#### Key Concepts

Instructors should design their courses to empower students. Empowerment refers to the amount of perceived control that students have over their learning. It does not matter whether the instructor thinks that he or she is giving students control; rather, what matters is that students perceive that they have control over some

aspect of their learning. The optimal amount of control needed by students to be motivated will vary from student to student and will likely depend upon many variables including the difficulty of the content, the ability of the students, and the extent of students' prior experiences related to the content. The main point is that students must believe that they have *some* control over *some* aspect of their learning.

### Background

Some of the most rigorous research related to empowerment has been conducted within the framework of self-determination theory (Deci & Ryan, 1985, 1991; Ryan & Deci, 2000). A key principle in this theory is that individuals enjoy activities when they believe that they have control over some aspect of them. Individuals who are self-determined (a.k.a., autonomous) have the ability to make choices and are able to manage the interaction between themselves and the environment. Activities range on a continuum to the extent to which they allow one to be self-determined. At one end of the continuum, fully self-determined students have an internal locus of control because they perceive a high level of freedom during an activity and have a sense of choice over their actions (Deci & Ryan, 2000; Reeve, Nix, & Hamm, 2003). In contrast, students who are not at all self-determined have an external locus of control because they have no autonomy or sense of choice and feel controlled.

Teachers' motivating styles can range from a highly autonomy-supportive style to a highly controlling style (Reeve & Jang, 2006). It is important to understand that autonomy-supportive teachers impose structure and have rules and limits, but do so in a manner that is informational and noncontrolling rather than coercive and controlling (Reeve, 1996). Students of autonomy-supportive teachers have been shown to receive many benefits, including enhanced conceptual learning, greater perceived academic and social competence, a higher sense of self-worth and self-esteem, greater creativity, a preference for challenging tasks, a more positive emotional tone, increased school attendance, and higher grades (Amabile, 1985; Boggiano, Main, & Katz, 1988; Csikszentmihalyi, 1985; deCharms, 1976; Deci, Schwartz, Sheinman, & Ryan, 1981; Filak & Sheldon, 2008; Flink, Boggiano, & Barrett, 1990; Grolnick & Ryan, 1987; Harter, 1982; Ryan & Connell, 1989; Ryan & Grolnick, 1986; Shapira, 1976; Vallerand & Bissonnette, 1992).

**Question 1 for eMPowerment.** Do students believe that they have control over some aspects of their learning?

*Suggestions.*

- Provide students with meaningful choices as to the topics they can study, the materials they can use, the strategies they can implement, and/or the students with whom they can work (Ryan & La Guardia, 1999). As an example, students were more motivated when they were allowed to choose their collaborative learning partners than when their professor assigned them to groups (Ciani, Summers, Easter, & Sheldon, 2008).

- Give students some control in developing or implementing class activities. Joe Du Fore, an instructor for Concordia University, creates an outline of a class presentation with some bullet points and pictures using online "cloud computing" (e.g., Google Docs) prior to class. During class, he projects this outline on a large classroom screen, and students add important points and vocabulary online through their computers in real time. As they do, the information appears on the projector screen and on other students' computers. In this manner, he is responsible for teaching the lesson, but the students help to create the presentation. Students can keep the final presentation in electronic format on their computers for later reference.

- Allow students to control the pace of the lesson (Roblyer, 1999). For example, instead of assigning 12 specific due dates for each of the 12 online quizzes, an instructor could assign three due dates by which four quizzes are due (e.g., Quiz 1, 2, 3, and 4 due April 18). Doing so would allow students more flexibility in deciding when to work on a lesson.

- Provide opportunities for students to express their opinions and carefully listen to and consider their opinions (Reeve, 1996). One way to do this is through discussion, such as a Socratic dialogue, which includes asking probing questions about ideas and issues, asking expansive questions about the relationships among ideas, playing the devil's advocate role and other comic relief, spending time on group maintenance and processes, and taking advantage of positions and roles taken on by others in the discussion (Gose, 2009, p. 45). Business administration students in one study perceived higher levels of autonomy with online discussions than with face-to-face discussions (Shroff & Vogel, 2009), indicating that online discussion has the potential to foster empowerment in courses (see Toledo, 2006 for a discussion).

**Question 2 for eMPowerment.** Do students believe that the teacher empowers them and does not try to manipulate their behavior?

*Suggestions.*

- Provide rationales for rules and directions (Deci & Ryan, 1985). Instead of telling students that the use of computers in the classroom is prohibited (assuming that typing is not necessary for note taking or other activities), an autonomy-supportive teacher would explain to students that typing during class distracts other students, which can have a detrimental effect on

their learning. Similarly, autonomy-supportive instructors explain their rationale for their attendance policy. If instructors cannot provide an honest and reasonable rationale to students, they should reconsider why the rule or direction exists.

- Allow students to help create the classroom policies. Dr. Gunild Kreb, lecturer at the University of Konstanz, Germany, allows her students to be involved in making their own rules during the first class session. She opens the class to discussion on how they want to handle issues such as coming to class late, cell phones ringing in class, and addressing one another (formally or informally). Students then vote on the rules that they want to adopt. Next, she writes the newly created rules on a flip chart, takes a digital photograph of the chart, and emails it to everyone in the class so that they have a copy of all the rules. Interestingly, she reports that the students create stricter rules than the ones she would have developed on her own.

### Design for Usefulness

#### Key Concepts

Instructors should ensure that students understand why the content is useful. In some types of courses, this will be obvious to students and the instructor will have to do little to ensure that students understand the usefulness of the material. In other courses, it will not be clear to all students why what they are learning is useful to their interests (including their career goals) and/or in the “real-world.”

#### Background

Future time perspective theorists have studied how students’ motivation is affected by their perceptions of the usefulness of what they are learning for their future (De Volder & Lens, 1982; Kauffman & Husman, 2004; Tabachnick, Miller, & Relyea, 2008). They have found that students are more motivated when they have more distant goals and have long-range behavioral projects to obtain those goals than when they have only short-term goals (Simons et al., 2004). Further, students who perceived their schoolwork to be less relevant to their goals were less motivated than those who saw the relevance in their schoolwork and had a positive outlook on their future (Simons et al., 2004; Van Calster, Lens, & Nuttin, 1987). First-year college students who perceived a course to be highly useful and were internally regulated (i.e., the underlying motive resided within the individual to participate in the course) were more motivated and had more positive learning outcomes than students who were lower in either perceived usefulness or internal regulation (cited in Simons et al., 2004).

The expectancy-value model of motivation (Eccles et al., 1983; Eccles & Wigfield, 1995; Wigfield & Eccles, 1992, 2000) predicts that student performance is directly influenced by both expectancies and values. One of the value components in the model, utility value, is defined as the usefulness of the task in terms of an individual’s future goals. Researchers have documented that students’ values relate strongly to their effort on tests (Cole, Bergin, & Whittaker, 2008) as well as to their intentions and choice of activities, including whether they continue to take courses in a particular subject area (Eccles, 1984a,b; Eccles et al., 1983; Meece, Wigfield, & Eccles, 1990; Wigfield & Eccles, 2000). A subject area or course would have a high utility value for a student if it was needed to fulfill a degree requirement or if it was seen as useful for his or her future occupation. For example, in a study of university freshman engineering students, my colleagues and I found that the best predictor of students’ intentions to pursue a career in engineering was their level of utility value, which explained 51% of the variance in their intention to pursue an engineering career (Jones, Paretti, Hein, & Knott, 2010).

**Question 1 for Usefulness.** Do students understand why what they are learning is useful to their interests, to their career goals, and/or in the “real-world”?

#### *Suggestions.*

- Explicitly explain to students how the material is related to their interests, career goals, and/or the real-world (e.g., Jang, 2008). In some cases, students will not have enough knowledge or experience in a field to understand the types and variety of knowledge and skills needed for a particular career or in the real-world. Making explicit connections for students can be very helpful to them if the instructor has any doubt that some students may not see the usefulness of the material.

- Provide opportunities for students to engage in activities that demonstrate the usefulness of the content to their future career. Dr. Marie Paretti, a professor at Virginia Tech, requires engineering students to interview professional engineers regarding the importance of communication, teamwork, or globalization in the engineering profession. Then, students work in groups to synthesize their findings and present the results to their classmates. Dr. Paretti reports that this activity helps students understand more fully the importance of these skills (especially writing) in the workplace and can motivate them to focus more on these skills during their courses.

- Provide opportunities for students to engage in activities that demonstrate the usefulness of the material in the real world. In her courses at the University of Alaska, Dr. Barbara Adams required students to consider real-world applications for mathematical equations. For example, when discussing the quadratic

function, students could connect it to the trajectory of a basketball shot. In another lesson designed to teach students the different types of symmetry, Dr. Adams had students (who included rural Alaskan students) investigate the geometry in Alaska Native and Native American artwork.

### Design for Success

#### Key Concepts

Instructors should design all aspects of courses such that students can succeed if they obtain the knowledge and skills and put forth the effort required. Students need to believe that if they invest effort into the course, they can succeed. This does not mean that a course has to be easy. In fact, students will be bored and unmotivated if the course is too easy. The instructor needs to structure the course to be challenging, provide feedback about students' knowledge and skills, and provide the resources necessary for students to succeed.

#### Background

Self-perceptions of competence (i.e., one's beliefs about one's abilities) are central to many current motivation theories including self-concept theory (Marsh, 1990; Marsh & Yeung, 1997; Schavelson & Bolus, 1982), self-efficacy theory (Bandura, 1986, 1997), self-worth theory (Covington, 1992), goal orientation theory (Ames, 1992), and expectancy-value theory (Wigfield & Eccles, 2000). Perceptions of one's competence have been deemed so important to one's motivation that the most recent handbook of motivation was titled *Handbook of Competence and Motivation* (Elliot & Dweck, 2005a) to emphasize that competence is the "conceptual core of the achievement motivation literature" (Elliot & Dweck, 2005b, p. 5). It is now fairly widely accepted that competence is an inherent psychological need of humans (Elliot & Dweck, 2005b). Humans have a need to be good at what they do. Looked at another way, individuals want to avoid incompetence and being unsuccessful.

Success, as well as failure, is critical for students because it provides feedback that they can use to adjust their self-perceptions of competence. Compared to students who do not believe that they are likely to succeed, students who believe that they are likely to succeed at an activity are more likely to choose that activity, put forth more effort in that activity, persist longer at the activity (especially when faced with challenging tasks), be resilient in the face of adverse situations, enjoy the activity more, set challenging goals and maintain a commitment to them, be less anxious in approaching difficult activities, and achieve at a higher level (see Schunk & Pajares, 2005 for a discussion). For

students to be motivated, it is not enough for them to simply achieve success because students do not find much enjoyment in easy successes. Rather, research related to flow theory (Csikszentmihalyi, 1990) suggests that individuals find the most enjoyment during activities in which the difficulty is at a similar level as their ability. When the difficulty of an activity is greater than the student's ability level, the student feels anxious. When the difficulty of an activity is less than the student's ability level, the student feels bored. Students are the most engaged and experience the greatest amount of enjoyment in an activity when the difficulty of the activity matches their ability level.

**Question 1 for Success.** Do students understand the instructor's expectations of them?

#### *Suggestions.*

- Make the expectations for the course activities clear and explicit. Dr. Lyman Dukes III, a professor at the University of South Florida St. Petersburg, develops comprehensive syllabi for his courses that include detailed instructions for assignments. On the first day of a course, he announces that there will be a quiz at the end of the day's class, and then he reviews the syllabus in detail, answers all questions related to the course requirements, and administers a quiz covering the course syllabus and expectations.

- Provide clear and understandable directions for all assignments. Rubrics that specify grading criteria are an excellent means to make explicit the criteria that the instructor will use to grade open-ended assignments, such as when students write reflections, make brochures, or create concept maps (see Levi Altstaedter & Jones, 2009, for examples).

**Question 2 for Success.** Do students find the learning activities challenging in that they are not too hard or easy?

#### *Suggestions.*

- Provide learning activities that challenge students. Dr. Blake Spirko, a professor at Tufts University School of Medicine, purposefully selects clinical scenarios that require students to analyze patient cases. At first, student physicians tend to believe that the cases are straightforward to solve. However, as they progress through their solutions, the complexities and challenges of the cases become apparent and motivate students to further explore the variety of possible solutions.

- Divide longer or more complex learning activities into manageable sections that challenge but do not overwhelm students. Students who find a learning activity too complex and are not able to break down the activity into smaller steps may not have the confidence to proceed and might postpone working on the activity. A related approach is for instructors to model the smaller steps to show students the behaviors that they expect students to learn. Doolittle, Hicks,

Triplett, Nichols, and Young (2006) explained how reciprocal teaching can be used by instructors to foster students' reading comprehension by modeling reading comprehension strategies, then gradually allowing students to take control of the strategies and to become more self-regulated.

- Order learning activities, or steps within each activity, by difficulty level, starting with the easiest and progressing to the hardest. Doing so can allow students to feel a sense of competence as they progress.

**Question 3 for Success.** Do students receive regular feedback about their level of competence?

*Suggestions.*

- Provide assignments and/or assessments for students to receive feedback about their competence throughout the course as opposed to only once or twice (e.g., having only a mid-term and final exam). It is not critical that the assignment or assessment be graded, only that the students receive feedback about their competence. Some instructors have incorporated creative uses of technology to provide more feedback to students. For example, one instructor found that students who received digitized oral feedback (using mp.3 files) about their electronically submitted papers were more motivated than students who received written feedback using the "track changes" feature of a word processing program (Harper, 2009).

- Encourage students to set specific, attainable (but challenging), short-term goals that lead to longer-term goals. Goals indicate the type of performance to be attained, and feedback helps students track their progress in relation to their goals and make adjustments as necessary (see Alderman, 2008).

**Question 4 for Success.** Do students believe that they can succeed if they put forth the effort?

*Suggestions.*

- Allow students to re-do assignments and/or assessments. Doing so shows students that the instructor's focus is on learning, as opposed to only performance. The limitation to this approach is that it can require more of the instructor's time to re-grade the assignment or assessment. By having students complete assessments online, instructors can automate the grading of at least some assignments, which can reduce their workload.

- Provide help (e.g., providing strategies, answering students' questions, offering resources, facilitating a way for students to help one another, etc.) to students who are not succeeding. One way to help students is by providing a "Study Tips" guide that provides examples of what students can do to be successful in the course. The study tips can be more general in nature (e.g., "Relate the textbook information to something you know.") and/or more specific to the course (e.g., "Complete the questions at the end of each textbook chapter before completing the online quiz.").

- Provide accurate and honest feedback in a manner that encourages students to put forth effort. For example, providing only general, negative feedback (e.g., "You are a bad writer and should work on your writing skills.") will likely do less to motivate a student to become better than providing reasonable, specific suggestions for how the student can improve (e.g., "You need to improve the quality of your transition sentences.").

- Set high, but reasonable course expectations. The number of assignments, assessments, and requirements should push students to work hard, but they should not be so numerous or extensive that they overwhelm students and create unnecessary anxiety.

- Provide a variety of assignments that allow students to demonstrate their knowledge in different ways (e.g., concept maps, writing assignments, multiple-choice quizzes, presentations, projects, etc.). A course with only one type of graded assessment might hinder some students who believe that they are not good at completing that particular type of assessment.

### Design for Interest

#### Key Concepts

Instructors should ensure that their classroom activities and/or course topics are interesting to students. It is important for instructors to realize that *they can* influence students' interest. This idea is summarized nicely by Hidi and Renninger (2006), who stated "The potential for interest is in the person but the content and the environment define the direction of interest and contribute to its development" (p. 112). Creating classroom settings to elicit interest can attract the attention of students, but instructors should avoid implementing gimmicks that are interesting for only a few minutes and do not lead to a more sustained interest or do not connect with the course objectives in any significant manner. Further, instructors should think beyond creating interesting classroom activities to thinking about how they might incorporate aspects of instruction that foster in students a more enduring interest in the course content.

#### Background

Although there are a few different theoretical and conceptual definitions of interest (Krapp, Hidi, & Renninger, 1992), one general definition is that interest is "liking and willful engagement in a cognitive activity" (Schraw & Lehman, 2001, p. 23). Thus, interest is a psychological state that consists of an affective component of positive emotion (the liking) and a cognitive component of concentration (the engagement; Hidi & Renninger, 2006). Most

researchers distinguish between: (a) situational interest (similar to curiosity), which is of temporary value, environmentally activated, and context-specific; and (b) personal (a.k.a., individual) interest, which is of enduring personal value, internally activated, and topic-specific (Schraw & Lehman, 2001). Interest is related positively to measures of attention, memory, comprehension, deeper cognitive engagement, thinking, goal setting, learning strategies, choice of major, and achievement (Hidi & Renninger, 2006; Schunk et al., 2008). The reason that interest leads to these positive outcomes likely depends upon the context, but several hypotheses have been purported and studied, including that interest leads to greater attention on the task, interest makes it easier for students to access their more extensive prior knowledge, and interest frees up more cognitive capacity for the task content by decreasing the demands of regulating time and effort on an uninteresting task (Schunk et al., 2008).

A useful framework for considering the development of individual interest is the four-phase model developed by Hidi and Renninger (2006) and presented in Appendix A. The four phases are considered to be sequential in that situational interest provides a basis for individual interest. The information in the “Description” row of Appendix A shows that an individual interest emerges only when students begin to obtain more content knowledge and to value the content. Thus, activities designed to capture the short-term attention of students, such as those infused with many audio or visual elements, might trigger situational interest but not lead to individual interest unless students also obtain the requisite content knowledge and value it (Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000). Situational and individual factors always interact to create interest, or lack thereof (Bergin, 1999, p. 89; Tsai, Kunter, Lüdtke, Trautwein, & Ryan, 2008). For example, building a robot might be interesting to some engineering students but not to others who have already built a similar robot in the past, even if they have an individual interest in engineering. Very few researchers have examined how to effectively develop individual interest in students enrolled in higher education. Finally, instructors must be cautious about using too many interesting details to stimulate situational interest because too many highly interesting details can reduce students’ cognitive processing capacity and actually *decrease* students’ learning (Mayer, Griffith, Jurkowitz, & Rothan, 2008).

**Question 1 for Interest.** Do students demonstrate a situational interest in the course activities?

*Suggestions.*

- Include one or more of the following elements in course activities: novelty, food, social interaction, games and puzzles, fantasy, humor, narrative (i.e., stories), activities requiring physical movement (i.e.,

“hands-on” activities), or content related to injury, sex, or scandal (see Bergin, 1999 for a discussion). As a means to incorporate novelty, humor, and social interaction, Dr. Gail Jones, a professor at North Carolina State University, teaches students science process skills by showing them Gary Larson cartoons and asking them: (a) What are your observations? and (b) What is the inference in the cartoon?

- Design course activities and select content that relates to students’ background knowledge and interests. Students tend to be more interested in things that they already know something about (Alexander, Jetton, & Kulikowich, 1995). For example, a math instructor could provide students with math problems that relate to something about which his or her students know or are interested; an English instructor could select works of literature involving characters with whom students can identify; or a history instructor could select readings that portray historical figures as real people to whom they can relate or who have distinctly human qualities (Ormrod, 2008, p. 523).

- Select course activities that engender emotions. Because interest consists of an affective component, the instructor should think of ways to trigger students’ emotions and generate feelings about the content. Suggestions for facilitating positive feelings include promoting students’ autonomy, offering choice in tasks, and providing support for student success (Hidi & Renninger, 2006, p. 122). Negative emotions such as anger can also be motivating, as Bergin (1999) explains with an example of a student who dislikes the writing style of William Faulkner but is interested in critiquing it.

- Vary your presentation style. One instructor found that PowerPoint was an effective way to provide variety and could generate student interest in university lectures, but only when it was used by competent and interesting instructors whose content was challenging and important (Clark, 2008).

- Provide information that is surprising or inconsistent with students’ prior knowledge. When students encounter a state of cognitive conflict between what they expect and what they experience, they are motivated to resolve the conflict (Wadsworth, 2004). Dr. Gail Jones models the steps in a learning cycle by using drinking birds (“toy heat engines that mimic the motions of a bird drinking from a fountain or other water source” [Drinking bird, n.d.]) to demonstrate several physical laws of chemistry and physics. She asks students to make observations of the bird, asks them what questions they have about it, and asks them what experiments they would like to conduct to figure out what makes the bird drink. Next, the whole class conducts the experiments, revisits their questions, asks more questions, and conducts more experiments until they finally figure out how it works. She ends the

lesson by applying the concepts to new applications, such as how a refrigerator works.

**Question 2 for Interest.** Do students demonstrate an individual interest in the course content?

*Suggestions.*

- Incorporate the other components of the MUSIC model into your teaching. Instructors can promote individual interest by: (1) *empowering* students by providing opportunities for them to have control over their learning, (2) demonstrating to students the *usefulness* of the content for achieving their goals, (3) ensuring that students achieve *success*, and (4) fostering a *caring* climate (Bergin, 1999; Osborne, Kellow, & Jones, 2007).

- Show interest in and enthusiasm for course activities and content. In doing so, the instructor might promote situational interest, but he or she also might develop students' individual interest by acting as a role model who has an individual interest in the content.

- Provide time during and/or outside of class for students to ask questions regarding things they are curious about. Students in the early phases of interest development might benefit from the instructor providing questions for them to answer; however, students with an individual interest will generate their own curiosity questions and should be encouraged by instructors to do so (Hidi & Renninger, 2006, p. 122).

### Design for Caring

#### Key Concepts

Instructors should demonstrate to students that they care about whether students successfully meet the course objectives. Caring does not imply that the instructors are good buddies with the students. Although it is important to be friendly with students and to not show signs of animosity towards them, the key to designing for caring is that students believe that the instructor cares about their *learning*. An important aspect of caring about students' learning is that the instructor cares about the students' well-being. In higher education, students' well-being usually becomes relevant only when an issue related to a student's personal life interferes with course requirements. In these situations, it is important to respect students as people with lives outside of school and to consider how course accommodations might positively affect their learning related to the course objectives as well as to their personal lives.

#### Background

Many researchers believe that all humans have a need to establish and sustain caring interpersonal relationships (Baumeister & Leary, 1995; Ryan & Deci,

2000). Researchers have used many different terms to refer to the concept of caring, such as belongingness, relatedness, connectedness, affiliation, involvement, attachment, commitment, bonding, and sense of community. Baumeister and Leary (1995) proposed that the need to belong has two main features. First, individuals need frequent personal interactions with another person. Second, individuals need to perceive that another person cares about their welfare and likes them and that the relationship is stable and will continue into the foreseeable future.

To understand the caring component more fully, it is helpful to consider how researchers have operationally defined caring interpersonal relationships between instructors and students. Reeve (1996, p. 205) reported that researchers defined these caring relationships by the extent to which the instructor shows affection (liking, appreciation, and enjoyment of the student), care, attunement (understanding, sympathy), dependability (availability when needed), interest in and detailed knowledge about the student, and dedication of resources (such as time, interest, aid, energy, and emotional support). Caring relationships with instructors have been shown to be related to intrinsic motivation, positive coping, relative autonomy, engagement in school, expectancies, values, effort, cognitive engagement, self-efficacy, persistence, and performance (Freeman, Anderman, & Jenson, 2007; Furrer & Skinner, 2003; Goodenow, 1993; Hyde & Gess-Newsome, 1999/2000; Murdock, 1999; Osterman, 2000; Ryan, Stiller, & Lynch, 1994; Walker & Greene, 2009). Some studies have reported that caring relationships with faculty and are very important for students (Levett-Jones, Lathlean, Higgins, & McMillan, 2009; Seymour & Hewitt, 1997) and that the students feel unsupported without them (Margolis & Fisher, 2002). Possible reasons for these positive outcomes of caring relationships include: (1) students may want to please their instructor, (2) students might come to accept the instructor's values if they like and respect him or her, and (3) the caring can generate positive feelings and motivational states which may lead to students feeling more comfortable to engage in more active learning, such as asking and answering questions (Stipek, 1998).

**Question 1 for Caring.** Do students believe that the instructor cares about whether they achieve the course objectives?

*Suggestions.*

- Show concern for students' successes and failures. I examine all students' grades every couple weeks and send emails to students who are not doing well. In the email, I let them know that I notice that they are not doing very well, I ask them whether they have read the advice document I provided at the beginning of the course (the document includes tips for



succeeding in the course), and I ask them if there is anything that I can do to help them succeed. Almost always, I receive an email response from the student thanking me for my concern.

- Listen to and value students' opinions and ideas. Dr. Tracy Hargrove, a professor at the University of North Carolina Wilmington, provides students with a common experience by having them work in groups to solve problems and discuss issues. She believes that the shared experiences increase the chances that students will feel that they have something of value to contribute to the group, which can promote better whole-class discussions.

- Devote time and energy into helping students. Instructors can do this by responding to students' emails and calls promptly and making themselves available to students for questions and concerns about the course.

**Question 2 for Caring.** Do students believe that the instructor cares about their well-being?

*Suggestions.*

- Consider making reasonable accommodations for students who experience extraordinary events in their personal lives. In my experience, extending deadlines for students in these situations can make a big difference in their personal lives and shows that I care about whether or not they achieve the course objectives.

- Show concern about and interest in students' lives. For my online courses, I ask students to write a one-page description of themselves and email it to me within the first few days of the course. I read through these and write responses to students in which I comment on something they wrote to show my interest. I do not remember everything about all the students, but I keep the written descriptions, which I can refer to during the course when interacting with them online.

**Question 3 for Caring.** Do students have opportunities for positive interactions with one another?

*Suggestions.*

- Use cooperative or collaborative learning to have students work together to meet course objectives. Dr. David Malone, a professor at Duke University, has found that students in his classes become energized when they work together on meaningful tasks. For one class, students solve a case study by having each team member become an "expert" in one particular area and then teach this information to their team members. Each team then shares their solution with the other teams in the class.

- Design class activities that teach students content as well as allow them to get to know one another on a personal level. For example, to allow students to practice using past tense in a Spanish language course, an instructor asked students to create two objects out of *Play-Doh* that were important to

them based on their past experiences (see Jones, Llacer-Arrastia, & Newbill, 2009). She then provided written questions about the objects (e.g., Why did you create that particular object?) and asked students to give oral answers in Spanish to their partner using past tense. Next, the instructor asked the students to share some of the information that they learned about their partner with the remainder of the class. Students reported that they enjoyed this activity and that it helped them with their language skills as well as with getting to know their classmates and instructor (who also participated).

### Implementing the Five Components

In this section, I provide some suggestions based on my experiences in trying to implement the MUSIC model components into my own teaching over the past 11 years.

- Instructors should take the time to decide how to best incorporate these components into their course. When I have not allotted the time to fully think through the implications of my course design and instruction with a consideration for the five components, I am rarely as satisfied with the course as I would like to be.

- The first time a course is taught, instructors should consider the five components in the design but only focus on a few components that they believe are most critical. It is difficult to design a course with all of the components included in every course activity the first time that a course is taught.

- During the course, instructors should write notes to themselves about the success of their instruction and list changes that they could make if they were to teach the course again. The next time they teach it, they should try to implement a few more changes that will make the instruction more consistent with the components. Each time they teach it, they should push themselves a little more outside of their comfort zone by trying new things. Some strategies may not work well, but the important point is to learn from them and take the time to modify the course the next time. I have rarely been successful at making major changes in a course design that were far outside my comfort zone. Rather, I recommend that instructors stick to some of their tried-and-true techniques and make changes within, or on the edge of, their comfort zone. Instructors should push themselves to try new things but not reach too far all at once.

- Instructors should be willing to try instructional strategies that have been found to be successful by colleagues and other instructors (see <http://www.MotivatingStudents.info> for more ideas). However, instructors should not be dissuaded if they have a good idea but have never heard of anyone else who has tried it. Some of my biggest successes have

occurred when I took chances and tried something that I created myself.

Instructors should remember to enjoy the process of designing their courses. Taking the time upfront to design a quality course will lead to students who are excited about their learning and the course. As a result, instructors will feel good about how their students have progressed in meeting the course objectives.

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to email their examples and ideas to Brett Jones at [brettjones@vt.edu](mailto:brettjones@vt.edu).

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#### Author Note

More information about the MUSIC model of academic motivation can be found at <http://www.MotivatingStudents.info>. Instructors who have teaching examples related to the components of the MUSIC model and would like to share them with others on the [MotivatingStudents.info](http://www.MotivatingStudents.info) website are encouraged

## Appendix A

## A Summary of the Four-Phase Model of Interest Presented by Hidi and Renninger (2006, pp. 114-115)

	Phase 1: Triggered situational interest	Phase 2: Maintained situational interest	Phase 3: Emerging individual interest	Phase 4: Well-developed individual interest
Definition	“refers to a psychological state of interest that results from short-term changes in affective and cognitive processing”	“refers to a psychological state of interest that is subsequent to a triggered state, involves focused attention and persistence over an extended episode in time, and/or reoccurs and again persists”	“refers to a psychological state of interest as well as to the beginning phases of a relatively enduring predisposition to seek repeated reengagement with particular classes of content over time”	“refers to the psychological state of interest as well as to a relatively enduring predisposition to reengage with particular classes of content over time”
Description	“sparked by environmental or text features”	“held and sustained through meaningfulness of tasks and/or personal involvement”	“characterized by positive feelings, stored knowledge, and stored value;” “the student values the opportunity to reengage tasks;” “student begins to regularly generate his or her own ‘curiosity’ questions”	[all of the characterizations of emerging individual interest]; “enables a person to sustain long-term constructive and creative endeavors... and generates more types and deeper levels of strategies for work with tasks”
Type of support needed <sup>a</sup>	“typically, but not exclusively, externally supported”	“typically, but not exclusively, externally supported”	“typically but not exclusively self-generated;” “requires some external support”	“typically but not exclusively self-generated;” “may also benefit from external support”
Developmental progression	“may be a precursor to the predisposition to reengage particular content over time”	“may or may not be a precursor to the development of a predisposition to reengage particular content over time”	“may or may not lead to well-developed individual interest”	N/A

Note: This table is a condensed version, not a comprehensive summary, of the information provided in Hidi and Renninger (2006)

<sup>a</sup> External support might include that from other people, such as peers or experts.