
MOTIVATING THE RELUCTANT, NOVICE LEARNER: PRINCIPLES OF MACROECONOMICS

Laura E. Fitzpatrick, Rockhurst University

Cheryl A. McConnell, Rockhurst University

Craig Sasse, Rockhurst University

ABSTRACT

Most instructors recognize the correlation between student motivation and academic learning and achievement. This is supported by literature not only establishing the link, but also work that includes myriad strategies for affecting multiple aspects of motivation. As a result, instructors who may desire to improve student motivation in their courses, but are unclear about how to address this vague, but important concept can seek out indications of how they can begin. A specific model (ARCS) was developed by John Keller (1983) to help instructors operationalize the important elements of motivation so that they could improve the impact of their instruction. The ARCS model—by examining the motivational constructs of attention, relevance, confidence and satisfaction—provides a practical framework for faculty to design instruction that increases student motivational perceptions. This paper describes how the ARCS model can be used to design and improve instruction in the economics classroom. Strategies are presented for increasing student perceptions in four motivational constructs. Specific economics examples and instructional ideas are offered to give practical applications of the model. Finally, a Principles of Macroeconomics course redesign is described and evaluated in terms of increasing elements of interest consistent with motivational constructs.

INTRODUCTION

Every time college instructors walk into a required introductory level class, they face the unique challenge of motivating reluctant, novice learners. Meeting this challenge is important because most college instructors recognize there is a direct

correlation between motivation and academic learning and achievement. Certainly, the instructor has the goal of meeting learning objectives set, and if instructor enthusiasm for his/her chosen field were sufficient to motivate students, there would be no challenge. But motivating students requires more than an instructor's passion for the subject taught. So the authors have been faced with a series of questions: how does an instructor proceed in seeking to increase student motivation overall, how does this apply to introductory required courses generally, and how does this apply to introductory economics courses specifically? The authors suspected that a key factor in motivation was in demonstrating to the student why particular course content was important in that student's learning and life. They also believed that it was paramount that students believe they were capable of using/applying the material beyond the classroom setting for it to be meaningful. This led to further questions. Beyond intuition and dedication, is there a more systematic way of addressing student motivation in the authors' courses in particular and courses in general? Is there a practical way to address student motivation in designing and delivering instruction?

Fortunately, extensive work has been done in motivation of learning research. Exploration of the literature reveals a wide variety of factors to be considered by the instructor seeking to improve the motivation to learn, including those of particular concern to the authors: making material relevant to students, and helping students master application of the material. Based on the foundation of learning motivation literature, John Keller created a model for systematic inquiry into motivating students with particular attention to the authors' desired areas of inquiry. Keller (1983) developed the ARCS model to help instructors operationalize the important elements of motivation so that they could improve the motivational impact of their instruction. The ARCS model provides a practical framework for faculty to devise motivationally designed strategies to increase student effort toward instructional goals. This paper: 1) explores the literature regarding motivation and learning, 2) explores the potential use of the ARCS model to design and improve instruction in economics courses in general, and 3) applies the ARCS model to a Principles of Macroeconomics course redesign, targeting the relevance and confidence subscales.

MOTIVATION AND LEARNING

The link between motivation and learning has been studied extensively by psychologists. Kohn (1993) concluded that the research was quite clear that typical

extrinsic motivators such as rewards, praise, and grades were not effective in enhancing student learning. For example, one group of researchers in studying what factors helped third and fourth graders remember what they had been reading, “found that how interested the students were in the passage was *thirty times* more important than how ‘readable’ the passage was” (Kohn, emphasis his, 145). Others who have directed their study to learning and motivation emphasize the intrinsic factors of purpose, interest, relevance, and satisfaction in motivating the student to engage in learning opportunities and instructional programs (Wlodowski, 1986; Keller, 1983).

The importance of intrinsic motivation has been found in work settings, as well (e.g., Kohn, 1993). Herzberg’s (1968) classic on motivating employees developed the idea of motivators and hygiene factors. Hygiene factors, according to Herzberg (1968) were things that often caused dissatisfaction but rarely were motivating in doing the work. These hygiene factors included things like relationships with supervisor, company policies, personal life, and salary, while motivators were more intrinsic, such as taking on responsibility, being in a position that allowed growth, being part of a winning team, and interest in the work itself.

At the college level, studies confirm the impact of intrinsic motivators on learning. Feldman’s (1989) extensive study of the factors impacting both student perceptions of instruction and student learning found that in addition to course organization and presentational clarity, the most important factors for learning were relevance of subject, stimulation of interest, and encouragement of discussion with peers. In applying these findings, Harvey Brightman (2005) uses the hygiene metaphor to compare factors often associated with instruction and course development. That is, factors such as textbook selection, quality of exams, knowledge of subject, and grades have much less impact on student learning than the high impact factors, which include the three factors that relate closely to motivation (i.e., relevance, peer support, and stimulation). The point is not that these hygiene factors are unimportant, but that they are not motivators towards student learning. Interestingly, grades act much like salary does in the workplace in that both can cause negative attitudes—and must be attended to carefully—but have much less impact on creating motivation to do the work.

Although there is some sentiment reported about teachers believing it is not their job to motivate students (e.g., Gorham and Millette, 1997), many scholars support the notion that student motivation can be influenced by teachers (Wlodkowski, 1986; Brophy 1987; Porter and Brophy, 1988; Sherman et al., 1987; Gorham and Christophel, 1992; Keller (1987a and 1987b); and Small and Gluck,

1994). Wlodkowski (1986) claims that although teachers cannot directly motivate students because each is responsible for his or her own motivation, “we can make things attractive and stimulating. We can provide opportunities and incentives. We can allow for the development of competence and match student interest with learning activities” (Wlodkowski, 1986, 14). Wlodkowski (1986) specifies motivation to “describe those processes that can (a) arouse and instigate behavior; (b) give direction and purpose to behavior; (c) continue to allow behavior to persist; and (d) lead to choosing or preferring a particular behavior” (Wlodkowski, 12). Specifically with respect to learning Wlodkowski (1986) identifies “a sequential pattern of motivation” as

“Energy→Volition→Direction→Involvement→Completion.” (Wlodkowski, 12)

The pattern focuses attention on the learner’s interest and interaction with the subject and activity.

In fact, other scholars claim that it is not enough to simply teach students, “but also [attract] their attention and interest and stimulate them to activate information-processing strategies, sense-making strategies, and other cognitive and metacognitive components of learning for meaningful understanding” (Porter and Brophy, 1988, 75). Sherman et al. (1987) note that among the five primary characteristics common for excellent college instructors is that they are stimulating. Thus, there is strong evidence that instructors have some ability to influence student motivation towards learning.

So how does one motivate student learning? Studies as those cited above are not necessarily helpful for instructors to operationalize and apply. Wlodkowski (1986) provides one helpful framework for implementing motivational instruction. Specifically, he breaks down instruction into three periods (beginning, during, and ending), and identifying “two general motivational factors that serve as categories for strategies that can be applied with maximum impact during those periods or time. They are:

- | | | |
|------------|----|---|
| Beginning: | 1. | <i>Attitude</i> —the student’s attitude toward the general learning environment, teacher, subject matter, and self. |
| | 2. | <i>Needs</i> —the basic needs within the student at the time of learning. |
| During: | 1. | <i>Stimulation</i> —the stimulation process affecting the student via the learning experience. |

2. *Affect*—the affective or emotional experience of the student while learning.

- Ending:*
1. *Competence*—the competence value for the student that is a result of the learning behavior.
 2. *Reinforcement*—the reinforcement value attached to the learning experience for the student.” (Wlodkowski, 1986, 19)

Combining this model with the identified critical factors cited by Feldman and other researchers, begins to show specific instruction can attend to the motivational needs of learners.

Brophy (1987) provides a five category framework, which includes over 30 strategies relevant to student motivation. One of the categories, “Stimulating student motivation to learn,” speaks directly to creating interest by students; among the strategies for the category are:

- ◆ “Model interest in learning and motivation to learn”
- ◆ “Project enthusiasm”
- ◆ “Induce task interest of appreciation”
- ◆ “Induce curiosity of suspense”
- ◆ “Induce dissonance or cognitive conflict”
- ◆ “Make abstract content more personal, concrete, or familiar”
- ◆ “Induce students to generate their own motivation to learn”
- ◆ “State learning objectives and provide advance organizers”
- ◆ “Model task-related thinking and problem solving” (Brophy, 45)

Consistent with the instructional motivation literature is Keller’s ARCS model (1983), which identifies four categories or constructs of motivating instruction. In explaining his model, Keller (1987a, 1) states, “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, four general requirements need 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” (Keller 1987a, 1). These requirements—gaining attention, establishing relevance, building confidence, and achieving satisfaction—focus on intrinsic motivation goals. It is this model that is applied here, first to show economic examples for increasing student perceptions on four motivational constructs, and second to give specific

instructional ideas to show a practical application of the ARCS model in a Principles of Macroeconomics course.

THE ARCS MODEL

Keller (1983) developed the ARCS model as both a tool to design motivating instruction and as a framework from which motivational perceptions of students could be assessed. ARCS is an acronym identifying the four constructs to achieving motivation: attention, relevance, confidence, and satisfaction. Keller identifies specific motivational objectives related to these constructs that can be met in any instructional sequence (see Table 1). Thus, the ARCS model serves as a tool for instructors to make specific instructional interventions in terms of increasing student interest and motivation in the courses they teach. Specifically, this section of the paper will describe how college teachers in Economics can use the ARCS model to help them design—either at the first stages of a new course or as an intervention to an existing course—motivating and appealing instruction for their students.

Table 1 - Motivational Components and the Objectives Sought by Instruction*	
ARCS Component	Instructional Objectives
Attention	Capture learner interest Stimulate curiosity Maintain learner attention
Relevance	Address learner needs Provide appropriate choices and responsibilities for learners Tie instruction to learner's experiences
Confidence	Build positive expectation for success Support students' beliefs in their competence Communicate that success is based on effort and ability
Satisfaction	Provide meaningful opportunities for learners to use their newly acquired skills. Reinforce learner successes Leave students with positive feeling for their success
* From Keller, 1987b	

USING THE ARCS MODEL FOR COURSE DESIGN IN ECONOMICS

Motivation research suggests that an essential component of motivation is based on expectancy-value theory. “The expectancy x value theory of motivation implies that, in order to motivate their students to learn, teachers must both help them to appreciate the value of academic activities and make sure they can achieve success on these activities if they apply reasonable effort (Brophy, 1987, 41).” Based on this theory the ARCS model asserts that careful instructional design can influence and improve student perceptions of value and expectancy for success. Understanding each subscale and how it relates to student motivation is essential before designing instructional interventions to increase motivation.

This section of the paper 1) describes each subscale as it relates to the college classroom, 2) identifies primary instructional design or improvement questions to address when evaluating courses, 3) provides supporting strategies to address the design questions, and 4) provides a specific application example within an introductory economics course context.

Attention

The first ARCS subscale refers to capturing and sustaining student attention. Keller states, “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 (Keller 1987a, 1).” In addition, the instruction should help stimulate an attitude of inquiry and generate interest in the particular topic and the subject in general.

Strategies

At the college level, students are responsible for engaging in the learning environment and remaining attentive. However, the instruction can enhance students’ ability and willingness to focus attention on the learning outcomes. That is, the instructor can design and deliver instruction that captures and maintains student attention. Attention strategies include using incongruity and conflict in presenting issues, using engaging instructional materials in text or video format, incorporating problem solving activities, and providing students the opportunity to

select projects or topics that reflect their interests. The following table provides classroom design questions an instructor might consider when addressing the attention subscale and suggests possible supporting strategies related to the economics classroom.

Table 2 - Attention Subscale Design Questions and Supporting Strategies	
Design Questions	Examples of Supporting Strategies
How can I stimulate an attitude of inquiry?	Use exercises, activities or questioning techniques that generate unanswered questions or increase curiosity about a topic.
What can I do to capture student attention for this topic or content area?	Create student curiosity by referencing current issues or events to introduce a topic.
Once I capture their attention, how can I maintain their interest?	Create connections by solving or helping students solve the unanswered questions generated about a topic. Vary styles and instructional methods. Allow student choice in selecting topics that interest them.

Economics Application Example

A structured student debate uses both current issues and varied instructional methods to address student attention in a course. Free trade can be a contentious issue in the classroom as students disagree about the whether short-run micro-economic costs outweigh long-run efficiency benefits. Adding to the disagreement are environmental, political, and human rights positions. Assigning student groups different stakeholder roles to represent and defend in class can provide a rich opportunity for students to evaluate many perspectives of a contentious issue. The key, of course, is that the group is tasked to represent a particular stake regardless of their own feelings or position on the issue.

Relevance

The relevance subscale refers to how important students view the subject matter being learned. In terms of expectancy theory, if students perceive the

material or exercises as relevant to their personal or educational needs, the level of effort expended will increase. Relevance answers the question, “Why or how is this material important to me?”

Strategies

Relevance can be present or future oriented. In an instructional setting, present-oriented relevance can be achieved by linking course content or concepts to the students’ existing frame of reference. Relevance is achieved by a student understanding how the content or concept relates to his or her prior experiences or knowledge base. Future-oriented relevance is achieved by linking course content or concepts to the students’ future goals. Using job-related examples in the classroom or posing situations likely to be faced in the future are methods to increase future-oriented relevance. Table 3 provides design questions and supporting strategies related to the relevance subscale.

Economics Application Example

Establishing relevance in required introductory economics courses is a challenge. Many, if not most students are planning to major in a discipline outside economics. At the sophomore level, prior education and job experiences are limited, and career goals may not yet be defined. Nevertheless, connections with the outside world to economic material can be made.

For example, an assignment for students may be to find a newspaper article relating to the concepts currently being discussed in class. The student may then be required to write a short essay on the economic concepts relied upon in the news article. This can be couched as “show me how this represents what we have covered in class” or “show me the relationship of this to what we have done in class.” An article detailing how American businesses are increasing their exports of computer software implicitly draws upon the concepts of comparative advantage, specialization, exchange rates, and determinants of demand. By delineating these concepts, the student creates a connection between the classroom and other aspects of a student’s life.

Table 3 - Relevance Subscale Design Questions and Supporting Strategies	
Design Questions	Examples of Supporting Strategies
What existing knowledge or experiences do students have related to the topic?	Survey students on the first day of class as to their prior courses, familiarity with economic concepts from media, job experiences and career goals.
How can I relate the topic to students' present knowledge or experiences?	Create intentional connections between experiences of <i>this</i> student group to the topic. The closer the connections, the greater the perceived relevance.
How can I relate the topic to students' future experiences or goals?	During class discussions or exercises, create situations in which students are responding as a consumer, an employee in their chosen field, or an employer.

Confidence

The confidence subscale measures the students' perception of their ability to successfully learn or perform the required concept or task. Experiences that are challenging enough to require thought and effort to succeed facilitate learning. Experiences that are *unnecessarily* vague or unstructured, or that are challenging to the degree of serious anxiety do not facilitate learning and are not motivating to students. High confidence leads to students maintaining effort associated with performing a task. Low confidence leads to blocks that prevent students from beginning or engaging in learning activities (Smith and Ragan, 1993).

Strategies

Designing classroom experiences that increase student confidence depends on the student level and course objectives. Logically, a sophomore introductory course with relatively unfamiliar material would lend itself to moderately challenging exercises that are clear and structured with early and frequent feedback. Advanced courses within the economics major would lend themselves to a higher level of uncertainty in the exercises or experiences, as well as a higher level of challenge. A successful instructor will read the classroom environment and make the adjustments necessary to challenge students to meet and exceed objectives, and

he or she will also recognize indicators of unnecessary anxiety that can lead to lower confidence and student efforts. Table 4 provides design questions and supporting strategies related to the confidence subscale.

Economics Application Example

Macroeconomic statistics such as inflation can seem confusing to the introductory economics student. Guiding the student through a process to calculate inflation which mirrors the government's can give students confidence not only in understanding this measurement but, also, in interpreting inflation data. Student groups may be required to establish a "market basket" of goods for the typical college student and then track the prices of these items for ten weeks. At the same time, students would gather national and regional data from news sources pertaining to inflation. After calculating the inflation rates for their market basket, students compare this to national and regional data. They then may account for the differences in the inflation rates in terms of the biases introduced into their and the government's measurement processes. Student confidence and expectations for success would be enhanced by clear instructions in terms of market basket formation, data collection, data manipulation, and data interpretation. This may include guidance from the instructor in terms of weighing the impact of promotions for products in the student's market basket as well as of the particular product mix and geographical limitations. This instructional intervention is more fully described and evaluated later in this paper.

Satisfaction

Satisfaction is achieved when students connect the achievement of learning goals with their individual effort. The connections can be made as the course progresses as well as when the course is completed. Satisfaction is also achieved when students are stimulated to maintain or increase efforts because of feelings of challenge or accomplishment.

Strategies

To connect learning goals with effort as the course progresses, students should be able to compare their performance with stated expectations and see how their efforts have led to achievement of course goals. Implicit in this subscale is an

element of equity. Students need to perceive that their efforts are being evaluated equitably as compared to the efforts of other students. At the end of the course, satisfaction can be enhanced when students see how they are now able to perform significant or comprehensive activities that they did not have the skills for at the beginning of the course. This summative confidence helps students feel a continued motivation to learn. If they are close to graduation, it can also help promote their transfer of new skills to their first professional work environment. To increase feelings of positive challenge or accomplishment, instructors can focus on personal attention, consistent feedback and the avoidance of negative comparisons. Table 5 provides design questions and supporting strategies related to the satisfaction subscale.

Table 4 - Confidence Subscale Design Questions and Supporting Strategies	
Design Questions	Examples of Supporting Strategies
Do students fully understand my expectations and course requirements?	When assigning student projects or activities, give explicit guidance on the expected outcomes as well as how the activity will be evaluated. Let students know the likelihood of success given varying amounts of effort.
Did I consider student composition and course level when designing the classroom activities?	Evaluate classroom assignments in introductory versus advanced courses. Assess the level of instructor support required at each level. Evaluate whether your assignments are not challenging enough or too challenging for the course level.
Do I appropriately support students in unstructured activities so that they are challenged to achieve the objective, but are not overwhelmed by the activity?	If asking students to perform a novel or unfamiliar task or activity, model the expectations. Give enough guidance to remove unnecessary anxiety, but yet achieve challenging learning objectives.

Economics Application Example

In economics, it is difficult to consider giving up an hour of course content for summative exercises or reflection. However, part of the faculty role is to help students understand how the learning in a specific economics course relates to their overall understanding of the wider world. If classroom time simply cannot be sacrificed, consider assigning a short reflection paper in which students discuss what they learned in the class and how it relates to other choices they make, strategies businesses pursue, and policies the government implements.

Table 5 - Satisfaction Subscale Design Questions and Supporting Strategies	
Design Questions	Examples of Supporting Strategies
Have I provided sufficient and appropriate opportunities for students to demonstrate their achievement of course objectives?	Review your course evaluation structure. Reflect on the quantity of exams, exercises and projects. Discuss course evaluation strategies with colleagues in your area.
Have I recognized student achievement in ways other than course grades?	Use verbal praise when appropriate. Recognize student achievement in front of others. Showcase quality student work in your classroom and office.
Have I considered a culminating exercise to help students understand how their course experience relates to other courses or their work environment?	Reserve all or part of the final class session for reflection and application exercises.
Are course requirements and policies applied consistently throughout the semester? Are exceptions rare and justified?	Review the syllabus to ensure that course policies are included and are presented clearly. Compare your course syllabus with those of other colleagues you respect to assure you have considered other class policies.

Instruction designed according to motivational factors can enhance learning outcomes. As students increase their expended amount and level of effort,

classroom objectives can be more easily met. Instructors interested in intentional improvement of their courses can design interventions to increase one or more of the motivational constructs in the ARCS model. When thoughtfully implemented, instructional activities often affect several motivational subscales. For example, a late-semester presentation could increase student perceptions of relevance, confidence and satisfaction. An analysis of current policy proposals could improve student attention, relevance and confidence. A thorough understanding of the subscales and strategies allows an instructor to design interventions that can potentially increase motivation in several areas. It is this possibility that led the authors to redesign and restructure a Principles of Macroeconomics course using the ARCS model.

REDESIGNING AND RESTRUCTURING PRINCIPLES OF MACROECONOMICS FOR INCREASED MOTIVATION

Procedure

Principles of Macroeconomics is an introductory, freshman/sophomore level course that serves three curricular purposes. First, it is a required, lower-division prerequisite course for students pursuing degrees in business. Also, it is a required course for students majoring in economics or economics/finance. Finally, it fulfills a core requirement of the university in the scientific-relational mode of inquiry. By far the largest numbers of students are in the course requisite to their business degrees, followed by those fulfilling course requirements, and finally by those pursuing majors in economics. Thus, the students are young, and are enrolled in the course not because of their interest in the subject matter, but because it is something they simply must take. In addition, most students have not had previous economics courses. The challenge to the instructor within such a context is to motivate students to learn the subject matter, see the relevance of the course material, and gain confidence in interpreting and applying the material outside the classroom.

The Course

The challenge presented by Principles of Macroeconomics lies not only in its being an introductory and required course, but also in the perceived difficulty of the subject matter. Although students are likely to have been exposed to some of the

relevant terminology through newspapers and news broadcasts, few have a good (if even accurate) understanding of this terminology, and even fewer have been exposed at a deeper level. The course involves a great deal of abstract conceptualization in building, applying, and interpreting economic models. Furthermore, making the connection to the real world can be challenging for some.

Initially, this course was delivered in a lecture/discussion format with the prime disseminator of information being the instructor. Although students were asked to make connections between course material during the lectures and discussions, and they completed simple application assignments dealing with real world events and developments, the content material flowed from the instructor to the student in a traditional manner.

Instructional Interventions

The introductory macroeconomics course was restructured to enhance the relevance and confidence elements in the ARCS model. This restructuring included a regrouping of the course material into four sections more recognizable to students with little or no exposure to economics. These were: *Our economy*, *Modeling the Macroeconomy*, *Problems in our Macroeconomy*, and *Policies to Change the Macroeconomy*. This increased the number of exams from three to four.

Further, three news assignments specifically geared to the first, second, and fourth sections of the course were assigned. These topics not only tied into the particular section of the course but also helped the students make connections between the classroom and the wider world by examining current and relevant topics. These topics were general information on the current economy, international trade issues, and current policy proposals. Students were required to trace the connections to class material in written form to turn into the instructor, as well as orally present their work to the class. The written work was graded, but the oral presentation provided for immediate feedback on the topic and its relationship to the class, how the student performed, allowed for ungraded practice of oral presentation skills, and broadly exposed the entire class to real world connections.

Two additional projects—one on inflation and one on unemployment—were designed to relate to the third section of the course. Economics relies heavily on the gathering of data and its analysis to reinforce or repudiate proposed models and policies for the economy. What the students learn from class is based on this scientific approach. To help the students understand not only the process through which the material they study came to be, but also the processes of data gathering

and analysis, student groups were required to gather and track relevant data on prices and unemployment. Students worked with this data on two levels. First, students established their own “market basket” of goods for the typical college student and then followed the prices of these items for eight to ten weeks for the inflation project. For the unemployment project, students surveyed their class to gather relevant employment data. At this point all economists are crying “bias” in the processes of and pools for data collection, but these inherent biases were intentionally built into the project. Part of the assignment, to be elaborated upon below, requires the students to critically assess biases in their projects.

In the second phase of these projects, students gathered national and regional data from news sources pertaining to inflation and unemployment. Using the data gathered, students then analyzed the data to determine the inflation rate for their group and the unemployment and underemployment rates for the class. They then compared these to national and regional data and in paper form evaluated the strengths and weaknesses of the process for the evaluation of these economic problems, accounted for the differences in their statistic and those gathered for the macroeconomy, and critically evaluated the biases which result from such calculations whether their own or those for official rates.

The last phase of the projects involved a restructuring of the final exam. Previously, the final exam had taken the form of an oral presentation. Student groups were assigned a chapter covered during the course of the semester and were required to prepare a presentation for the final that did not summarize or teach the information, but rather drew further connections between the class material and the current economic situation. To re-focus this assignment and make it even more relevant and clearly structured, the subject matter was changed. Each group selected current policies being proposed or implemented on the national level with respect to either inflation or unemployment. The group was then responsible for researching the policies, evaluating the policies using their research and models developed in class, and interpreting the possible outcomes of the policies in terms of what they were intended to accomplish and what they might actually accomplish. This format was selected over a traditional final exam because it would give students the opportunity to more firmly establish in their minds the relevance of the material studied as well as give them confidence in applying the material even after finishing the course.

Evaluation of Course Modifications

The primary interest in this course revision was student motivation, especially, in terms of student perceptions of course relevancy and their own confidence to successfully complete assignments. Two evaluation measures were used to this end, the IDEA student survey, and student ratings of the effectiveness of two new classroom assignments. The purpose of this course modification was not to attempt an empirical study of increased motivation. Class sizes at the authors' university makes empirical educational studies difficult. The authors do attempt, however, to show how faculty members can use existing course survey instruments and simple targeted questions to gauge the effectiveness of course modifications and assignments.

The IDEA student survey, developed by Hoyt and Cashin (1977), is a goal-based survey form where students rate the relative effectiveness of twenty teaching and learning elements. Among these elements are several items that help reveal student perceptions of motivation. Relevant IDEA items include:

- ◆ Promoted Teacher Student Discussion
- ◆ Helped Students Answer own Questions
- ◆ Encouraged Students to Express Themselves
- ◆ Demonstrated the Significance of the Subject
- ◆ Related Material to Real Life Situations
- ◆ Stimulated Students to High Intellectual Effort
- ◆ Introduced Stimulating Ideas About the Subject

Student ratings generally reflect teacher characteristics such as organization, approach, and personality. However, the IDEA norms each of the items against similar courses. Because similar courses are based on the factors of class size and student motivation, the IDEA provides some comparative data with other courses sharing the class size and student motivation challenges of introductory macroeconomics.

Results

Design changes to the Principles of Macroeconomics course were aimed at improving students' perceptions of course relevancy and their own confidence in completing difficult content material. The results from the IDEA student survey,

administered the first semester of restructuring, support the notion that the Principles of Macroeconomics course tended to make the content relevant and maintain student confidence. All the items are normed against the large IDEA data base of similar courses. On all items cited in Table 6, both sections of the course were rated above the mean for similar courses and in all but two cases were given a 'high' relative frequency. These results might be tied to the teacher characteristics rather than the course design, nevertheless, the results do show students feeling more confident and seeing more relevance than in similar type courses.

Table 6 – Means of Student Responses to Selected Items on the IDEA Student Survey						
IDEA Item	1st Implementation of Course Redesign					
	Section 1: N=32			Section 2: N=28		
	Mean	Diff. Similar courses	Relative Frequency	Mean	Diff. Similar courses	Relative Frequency
Promoted Teacher Student Discussion	4.0	+0.5	High	4.1	+0.7	High
Helped Students Answer Own Questions	3.3	+0.1	Medium	3.7	+0.4	High
Encouraged Students to Express Themselves	4.1	+0.5	High	4.0	+0.3	High
Demonstrated the Significance of the Subject	4.2	+0.4	High	4.0	+0.2	Medium
Related Material to Real Life Situations	4.2	+0.4	High	4.4	+0.6	High
Stimulated Students to High Intellectual Efforts	3.3	+0.3	High	3.5	+0.5	High
Introduced Stimulating Ideas About the Subject	3.5	+0.3	High	3.5	+0.3	High
Note: All items rated on a 5-point Likert Scale (1=Hardly ever; 5=Almost Always)						

The authors also asked students to rate the effectiveness of the two primary instructional interventions for the course, news assignments and the group inflation and unemployment projects. Students rated on a 3-point scale (1=not useful, 2=somewhat useful, 3=very useful). Table 7 reveals that most students found the assignments at least somewhat useful, and that the assignments were perceived more favorably among students the second semester using the restructured course. In addition, there was little variance between sections in the same semester with the percentage breakdowns being very similar when each iteration was disaggregated by section.

Table 7 – Student Ratings of the Effectiveness of Two Classroom Assignments

Instructional Assignment	1st Implementation of Course Redesign			2nd Implementation of Course Redesign		
	Not Useful (%)	Somewhat Useful (%)	Very Useful (%)	Not Useful (%)	Somewhat Useful (%)	Very Useful (%)
News Assignments	10	50	40	4	31	66
Inflation & Unemployment	12	45	43	13	25	62

Table 8 – Number of Students Taking First Economics Course

Semester	First Economics Course		Economics Course Taken Before	
Traditional Design	25	78%	7	22%
1 st Implementation of Course Redesign*	43	72%	17	28%
2 nd Implementation of Course Redesign*	38	70%	16	30%
<i>*Represents combined total of two classes</i>				

As part of the business core curriculum, students are also required to take Principles of Microeconomics. Because it is possible students' prior experience

with the content will affect motivation, students in the macroeconomics classes were asked if this was the first economics course they had taken. The results (table 8) show that at least 70% of students in each semester were taking their first economics course.

DISCUSSION

The increase in student ratings of the effectiveness of the assignments might, the authors speculate, be attributed to two factors. First, the original course design in terms of presentation and assessment was familiar to both the instructor and students. Because a majority of students in all the treatments were taking their first economics course it cannot be asserted that the new structure caused an adjustment of student expectations. The new course design, however, did require students to take a more active role in learning than might be typical in previous courses. For the instructor, the changes in the new course resulted in expected glitches in implementation of the course. A second possible reason for the initial indication of effectiveness being lower than in the second implementation involved the grouping of students. In an attempt to improve the functioning and diversity across groups, the instructor grouped students based on GPA. Citing differences in learning styles, differences in schedules, and differences in effort, many students expressed dissatisfaction with the group process as revealed in peer evaluations of group projects. Students overwhelmingly requested that groups be self-selected; thus the instructor implemented this approach the following semester. The subsequent increase in scores may then be attributed to experience gained from having offered the course before and from allowing students to select their own groups.

The results of the study may indicate a need to further develop the course in the area of group processes. While studies have confirmed cooperative learning methods to be effective for learning and in motivating students (Johnson and Johnson, 1989; Qin et al., 1995; Michaelsen, 1992), it has also been found that students must be actively taught group process strategies and techniques (Cottell, 1993; Feichtner and Davis, 1992; Michaelsen, 1992; Ravenscroft et al., 1995). In addition, many young college students have not had many productive experiences with group work (Feichtner and Davis, 1992). Although group work was a significant part of the course changes, little if no class time was spent developing group process skills, indicating a potential need for this support.

During the second semester of the new course design, the instructor also noted less need to lower the curve for exam grades. Furthermore, students on the whole seemed to perform better than the previous offerings of the course. In fact, the instructor was especially pleased by the outcome of the inflation and unemployment projects because of the quality of analysis displayed in the final reports. Thus, the active learning methods features in the course redesign may have reflected learning gains not otherwise revealed.

CONCLUSION

Motivating reluctant, novice learners is a challenge faced by all faculty members teaching introductory, required courses. Understanding the constructs of motivation and the instructional strategies to help increase student motivation is essential. The ARCS model provides faculty members a concrete, understandable method from which to design and build course modifications or interventions.

This paper has attempted to summarize the important literature on student motivation, describe a specific model for attending to student motivation, and provide an example of a course that was modified to increase perceived relevance and confidence. The process described is a positive example of scholarly teaching – teaching modifications that are informed by existing, relevant research, implemented and then thoughtfully and intentionally evaluated for continuous improvement.

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