

“Getting from Here to There” A Self-Diagnostic for Stimulating Faculty Development

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Abstract

With ABET 2000 making its way through our engineering education community, universities all around the country are diligently and painstakingly developing and assessing specific course goals for their curriculum. Unfortunately, far less attention is being given to developing and implementing processes that ensure course goals are successfully achieved in the classroom. This paper attempts to motivate faculty to examine their efforts for achieving the prescribed goals outlined for their course. The paper itself is written as a diagnostic model in which readers can discover for themselves, through active exercises within a small discussion group, the necessity for developing, writing, and implementing a sound teaching philosophy rooted in active learning. Faculty members are encouraged to develop a schematic model (flowchart) illustrating how their philosophy manifests itself in the classroom. The model is being developed primarily for new faculty members in the Engineering Mechanics Department at the United States Air Force Academy in hopes that it will accelerate their professional development and classroom improvement efforts.

I. Introduction

The process of professional (pedagogical) development for many instructors is limited to a one-time review of the "characteristics of a good instructor," e.g., an instructor must be enthusiastic, approachable, competent, organized, etc. Most instructors work diligently to develop or acquire these traits. But does practicing "good instructor traits" guarantee that the desired end-of-course objectives will be met? It is possible, but this approach typically falls short, since it fails to consider the specifics surrounding the presentation of the particular course materials, as well as the behavior and attitude of the students. Mapping the progression of how one successfully achieves the desired classroom outcomes based on a starting point of recognizing and practicing good instructor traits is fundamental to success and is the primary objective of the "getting from here (good traits) to there (course goals)" diagnostic model. Additionally, the model recognizes that this progression is unique to each individual and therefore is manifested only through one's own personal philosophy.

Active learning is a central theme to this progression for two reasons: (1) Each student enters the classroom with his or her own set of desired outcomes for the course. Often these outcomes are inconsistent with, or a subset of, the instructor's goals. Active learning empowers each student to control how learning takes place and, in addition, holds them accountable for success (or failure) in obtaining the end objectives. This assumes, of course, that the student's and instructor's outcomes are shared. (2) It provides an efficient vehicle for "getting from here to there," and to

show that active learning is a necessary extension of the development of a professor's personal teaching philosophy. This model allows the instructor to keep the outcomes in sight despite the distractions and the daily rigors that come with the profession.

At the Air Force Academy, faculty turnover is high with a typical tour length of four years. As new members are introduced into the department, they are mentored by the resident "experts" (those having 2-6 semesters of experience) during a month long "teacher training" seminar. Attempts are made to promote various pedagogical philosophies including active learning. While new faculty members are receptive to the ideas, the ideas are not often practiced—the new faculty member is absorbed in mastering the technical material and in the mechanics of lecturing in the classroom.

Recently the focus of the training seminar has shifted more heavily toward the concepts and importance of sound pedagogy. Moreover, the ideas are being reinforced throughout the semester by various means such as providing them with a "pedagogical thought of the day" as well as requiring a "pedagogical result of the day" which is discussed during weekly lesson conferences¹.

This paper and the diagnostic model presented herein are attempts to further personalize such ideas, hopefully motivating faculty members to develop a teaching philosophy and to investigate the rewards associated with active learning. Practice lessons delivered to other faculty members prior to the start of the semester provide an opportunity to try various techniques. The actual in-class contact time provides a chance to discover, for themselves, what works and what does not. Finally, by having members not only write their own personal philosophy, but also sketch a schematic flow-diagram of its implementation, instructors are provided with the motivation necessary to provide a more active classroom and are more prepared to achieve the end objective of successfully obtaining their end-of-course objectives.

II. Administration

It is proposed that a single facilitator familiar with the model administer the exercise to a small discussion group (10 or less) of faculty members teaching the same or similar courses. New instructors will probably find the model the most helpful, but all can benefit. The steps outlined in this paper are intended to serve as guidelines for the facilitator, but each discussion group will likely come to a unique set of conclusions. To help keep the discussion group on track and focussed, the model is broken down into seven discrete steps. Whenever practical, the objective, as well as sample results, are provided. These should serve to aid the facilitator until he/she has had an opportunity to work through the exercise a few times. The diagnostic should not take more than an hour.

A word of caution. The premise of the proposed model is that faculty (and their students) will benefit from developing a personal teaching philosophy. The intent of the diagnostic is to have members "discover" the necessity for developing their own philosophy. The model does not, nor is it intended to, provide guidelines for developing one. As a result, there are no "tangible end-products" to be developed. The reward is, rather, an intrinsic motivation that hopefully encourages each individual toward personal improvement.

Again, since the results are derived through the active exercises of a small discussion group, it should be expected that each group will arrive at different conclusions, and that some will conclude that teaching philosophies and active learning are not necessary. But the goal is to obtain end-of-course objectives. If this goal is obtained, then indeed the exercise was successful. The authors' hypothesis (and experience) is simply that the objective is more readily obtained through the practice of a sound teaching philosophy that encourages active (collaborative) learning.

III. Model Overview

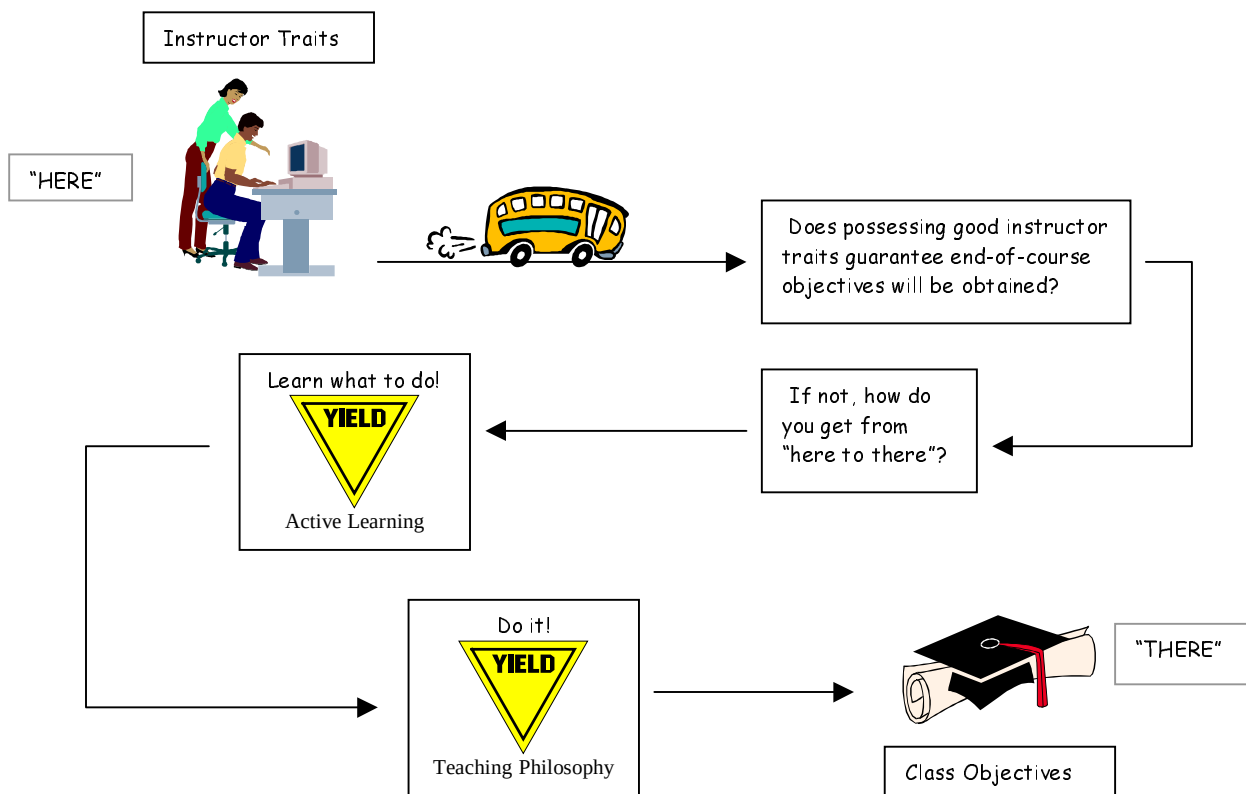


Figure 1: Overview of the Proposed Diagnostic Model

As illustrated in Figure 1, the diagnostic model begins where most new faculty do—with an examination of good instructor traits, “What do I need to do in order to be successful in the classroom?”. Unfortunately, “success” is (at least initially) hardly ever defined as obtaining the prescribed end-of-course objectives. Rather, the focus is on what the instructor must do (be enthusiastic, knowledgeable, interactive) to ensure that the students succeed. Clearly, such efforts are helpful and should be encouraged.

However, do such efforts ensure that the desired outcomes will be reached, or can we do more to provide a greater opportunity for success? The proposed model provides each instructor with an opportunity to reflect (along with his/her peers) on this very question. The model itself does not provide any answers or insight; rather, the intent is to guide the instructor in discovering what is best for them.

Once the “good instructor traits” have been defined, the model jumps ahead and asks the discussion group to provide the curriculum outcomes that they hope to obtain by the end of the semester. Having defined both the “here” and “there”, the question of how to obtain the latter (which is desired) from the former (which is what we typically work on) is posed. In order to aid the facilitator in keeping the discussion focused, short discussions on “active learning” and “teaching philosophies” are provided, as it is believed that both are useful in “getting from here to there.”

The model ends where it started. The discussion group is asked to restate what they believe to be the traits of a good instructor. From experience, the resulting conclusions are quite different than they were earlier. The focus now has a greater emphasis on student development and responsibility, end-of-course objectives, and risk taking. The instructor is no longer responsible for student success, but rather for developing a classroom environment that provides the best opportunity for the students to succeed themselves.

IV. Diagnostic Model.

Step 1: Goals Exercise

Objective: As with any exercise, it is important that the discussion group is aware of the intent of the session. At this time, list the model goals (below), provide background and motivation as deemed necessary, and emphasize that each member should be seeking *personal* improvement (in the classroom) through development of a *personal* philosophy.

GOALS

- 1. Encourage you to develop (and practice) a personal teaching philosophy.**
- 2. Motivate you to incorporate active learning exercises in the classroom.**
- 3. To discover together, through active exercises, the rationale for 1 and 2 above.**

Step 2: Develop Characteristics of a Good Instructor

Objective: The purpose of the diagnostic model is to investigate practical means of obtaining end-of-course objectives. At the beginning of the semester, faculty members take painstaking care to derive the desired course outcomes. However, little time is spent on how to obtain such goals, and even if specific techniques are employed, the multitude of distractions afforded by an academic environment tends to derail such attempts. More often the instructor seeks improvement by focusing on what they deem to be “good instructor traits” (enthusiasm, competence, etc). The question which remains is, "Does practicing these traits lead to successful obtainment of the desired course outcomes?". Maybe so, but probably not. The intent of the model is to find the connection. We begin by investigating “good instructor characteristics.”

Exercise #1. (1 minute, teams of two, one team member is the recorder) Inform the discussion group that you will provide them with a single question and their job is to come up with as many answers as they can within a minute. Answers don't need to be serious – just brainstorm and come up with as many as possible. Record the answers on a sheet of paper.

What are the characteristics (traits) of a good instructor?

Sample Results: For this exercise, group responses are fairly standard: enthusiastic, knowledgeable, dedicated, approachable, caring, competent, organized.

Note: Exercise #1 can also be performed with students on the first day of class. Students should be thanked for their input and told that the instructor will work on improving based on their input. Students are then informed that a similar exercise considering “characteristics of good students” could be conducted. Typically the exercise is skipped but obvious traits are described: preparation, participation, etc. The students are asked to work on these throughout the year.

Exercise #2. (2 minutes, same groups, other person is the recorder) For this next exercise, exchange lists with another group. Look over the new list and mark the top traits from their list. Also, answer the following question:

How can a person acquire, develop, or enhance these traits?

Sample Results: Preparation, experience, observing others, seeking feedback from peers.

The facilitator should record the results from exercise #2 (top 3 characteristics and means of obtaining them) on a chalkboard or overhead.

Step 3: Develop End-of-Course Objectives

Objective: Acknowledging and developing “good instructor traits” is the starting point. The ultimate goal, however, is to obtain the end-of-course objectives. In this step, faculty members are asked to list their goals for not just their students but also for their course and themselves.

Exercise #3. (5 minutes, whole group) Inform the group that we are now going to take a moment and skip ahead to the end of the semester. As a group, brainstorm on the following.

What should your students know (or be able to do) after a whole semester in your class?

(The facilitator should write the answers on another chalkboard approximately two or three boards to the right of the “good traits.”)

Sample results: As desired, many of the responses are higher-order cognitive skills such as problem-solving and critical thinking. Other typical responses include independent and life-long learning, communication and teamwork skills, maturation, and subject knowledge.

Exercise #4. (3 minutes, whole group, list answers under the results from exercise #3)

What outcomes do you desire for yourself as a result of your teaching?

Sample results: To have fun, to be effective (to obtain the course objectives), to learn the material, to become a better teacher.

Step 4: Discuss Getting from Here to There

Objective: This is the most critical (and most difficult) step. Mainly because there is no easy answer—at least not one that can be obtained quickly. Often, it is difficult for the instructor to see a direct link between the two. As a result the facilitator may need to provide more guidance.

Exercise #5. (3 minute reflection, small groups, don't write, just discuss the following)

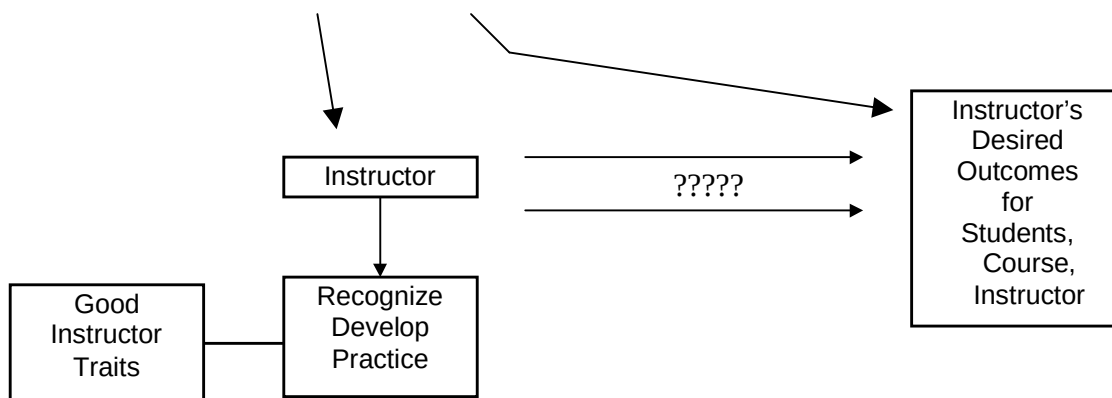
Generally, faculty members do an excellent job of recognizing, developing and practicing “good instructor traits.” It’s our strength. But to what end?

Does practicing “good instructor traits” guarantee that the outcomes will be met?

Does practicing “good instructor traits” help?

Can you attain the outcomes without practicing “good instructor traits”?

How do we get from “here” to “there”?



Sample results: As stated, step #4 is a difficult transition. There is no canned answer. The problem of “getting from here to there” is further complicated by the fact that the solution will be unique to each individual as much of it boils down to intrinsic motivation. However, beyond this a large part is knowing what to do, or where to go, or who to talk to. Many universities are establishing “centers for education development” where teams of experts are available to advise faculty. Unfortunately, these centers are usually understaffed or may not have discipline-specific knowledge. Moreover, their services are often underutilized.

Because of the obvious need to limit the time associated with the exercise, the facilitator will likely need to lead the discussion; however, as much as possible, the discussion group should be allowed to come to their own conclusions, as this is the crux of the model.

The only guidance typically necessary seems over simplified.

In order to get from here to there, you need only to (1) know what to do, and (2) do it.

It seems strange that such a statement of the obvious can be helpful. However, it has been discovered that it provides enough focus to get the discussion rolling. These two ideas of knowing what to do and doing it are broken into two mini-discussions.

Step 5: Knowing What to Do (Teaching Philosophy)

Objective: To motivate faculty toward developing a personal teaching philosophy. This portion of the exercise most likely will require each individual in the discussion group to devote a substantial period of time researching various pedagogical theories. To aid in the process it is recommended that faculty members seek advice from their colleagues or their university's faculty development center if available. If possible, new faculty should try to attend one of the myriad of seminars offered on this subject. The facilitator should provide each discussion group with several examples of teaching philosophies. If possible, the facilitator should also review sound pedagogical concepts appropriate for inclusion in a teaching philosophy.

Exercise #6. (Homework, no time limit, to be accomplished individually and later shared with the entire group)

Develop, write, draw and share a pedagogically sound personal teaching philosophy focused on achieving those end-of-course objectives that are so diligently prescribed at the start of the semester.

1. *Develop.* Developing a teaching philosophy is difficult. It requires experience and reflection often not available to new instructors. Perhaps the most efficient way to develop a teaching philosophy is to use existing samples as templates. Teaching philosophies should be shared with students and colleagues alike, and many individuals within academia have graciously done so. Samples can be found in textbooks, on the Internet, and most likely within your department or university². In addition, articles and texts referencing cognitive development, effective teaching, and active learning should prove useful^{3,4,5}. As new faculty gain experience, the document should be updated accordingly. Hence, a teaching philosophy is a living document
2. *Write.* It is important to put your philosophy in writing, as it requires honest reflection and thought to do so.

3. *Draw.* From the proposed diagnostic model, it has been found that drawing a schematic or flow diagram provides a means identifying how your teaching philosophy manifests itself in the classroom. The attached appendix is one such skeleton outlining how to “get from here to there.” The diagram acknowledges that the instructor alone does not define the end-points, but that the students input is critical also. It is the instructor’s role to get student input. The schematic also provides a quick reference that shows how a teaching philosophy and active learning exercises fit together. Note that the skeleton is provided only as a reference and should not be shown to the discussion group, which could introduce a bias.
4. *Share.* Sharing your document with colleagues provides continuous reflection and additional motivation. Review theirs. Perhaps the greatest reward will be in sharing your personal teaching philosophy with your students. It provides your student with a window into your beliefs and intents. The openness may even motivate the students.

Step 6: Doing It (Active Learning)

Objective: To promote active learning as a means of “getting from here to there.” It is one thing to know what to do. It’s another thing to do it. As Millis states, “Well-intentioned faculty are often at a loss for practical ways to operationalize these [active learning] techniques”⁶. As the semester wears on, and the daily grind takes hold, and additional duties demand more and more time, class preparation slips and lecturing (and “spoon-feeding”) replaces active learning activities—because it’s easier. Many times only the brighter students are called on because the instructor desires the answer in a timely manner.

With a little discipline, it is relatively easy to “know what to do.” This isn’t to say that it’s easy to implement, or to be successful, but with the many resources available on active learning, it’s not too difficult to come up with ideas. The difficult part is to continually stay focused on good pedagogy despite all the other distractions. New faculty often find it particularly difficult, since much of their time is focused on learning the material.

Exercise #7. (10 minute mini-discussion led by facilitator. Pass out examples of active learning exercises.) Restate our current paradigm.

The sole function of any faculty member is to successfully accomplish a set of prescribed end-of-course objectives upon completion of the semester. In pursuit of this goal, conscientious instructors take painstaking care to develop good instructor traits (as they define them). However, is this the way to obtain the objectives?

There is substantial evidence in the literature suggesting that active (cooperative, collaborative, problem-based) learning is the best means for obtaining the end-of-course objectives⁶. Moreover, there is a whole plethora of exercises available. Find out what is right for you and what is right for your students. Consider (a) different learning styles, e.g. MBTI, (b) different desires (different end of course objectives), (c) motivating behavior, e.g. short attention spans, and (d) lesson objectives (Bloom’s taxonomy, ABET 2000). Don’t expect it to work all of the time. It takes practice—and patience.

Step 7. Good Instructor Traits (repeated)

Objective: One of the most interesting results of this model typically occurs when step #1 is repeated at the end of the exercise. Discussion groups' responses are typically quite different from when first asked. Even with only limited reflection on "getting from here to there," the responses are much more focused on obtaining course goals rather than on the intrinsic characteristics of the instructor. Both are important, but the former, which is arguably the more important of the two, is often omitted by new faculty. Hopefully, this finally exercise provides the impetus for further personal development.

Exercise #8. (4 minutes, teams of two)

What are the characteristics (traits) of a good instructor?

Sample Results: Creative, risk-taker, unselfish, pedagogically knowledgeable

V. Conclusions

All faculty members can benefit from developing a personal teaching philosophy. Unfortunately, these benefits are seldom realized. New faculty members can get engrossed in learning subject material, experienced faculty can be entrenched in their ways, and those in-between are distracted with course development, research, and advising. Overcoming the faculty resistance is difficult but by no means impossible, and it is worth the effort⁷.

At the Air Force Academy, the instructor turnover rate is uniquely high. Developing a core cadre capable of leading the department in sound pedagogy is difficult to establish since there is constant departure of department members. As such, an attempt is underway to motivate new faculty, upon their arrival, toward researching, developing, and writing a personal teaching philosophy entrenched in active learning and sound pedagogy. Doing so requires a great deal of time, research, and guidance. As experience is gained, this living document is revised. Furthermore, the process of developing this document will hopefully motivate, focus, and aid the instructor in successfully attaining specific course objectives.

The proposed diagnostic model forces faculty to reflect on the process of how one attains the prescribed course objectives. The premise is that, in practice, efforts are focused on the mechanics of developing or enhancing "good instructor traits." The model acknowledges the importance of these. However, the intent is to further motivate the instructor to review the process and connection between these efforts and how they lead to the successful attainment of the desired course goals. It is hypothesized that a sound teaching philosophy centered on active learning is perhaps the most effective way of "getting from here to there." Regardless of the specific conclusions, the aim of the model is to permit individuals to discover for themselves means of improving their distinct classroom environment.

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VII. Appendix: Example of a flow diagram that identifies how a teaching philosophy manifests itself in the classroom.

