

## Development of Hybrid Orientation Program for Instructional Excellence

**Mequanint Moges, Victor Gallardo, Enrique Barbieri**

Engineering Technology Department  
University of Houston

**Aymara Boggiano, Carlos Ramirez**

Modern & Classical Languages Department  
University of Houston

### Abstract

This paper presents a preliminary study of development and implementation of effective teaching methodologies for Teaching Assistants/Fellows, Instructional Assistants, and other non full-time faculty at the University of Houston. Nowadays effective teaching methodologies rely on multi-sensory information relay approaches that utilize all senses in order to help students from different backgrounds and with different learning styles. A hybrid orientation program is proposed in this development for a comprehensive, uniform, repeatable, and accessible source of instructional materials and tools for effective teaching methodologies. The proposed hybrid orientation program comprises a generic set of modules that are easily adapted by other departments or disciplines across campus. In order to achieve and sustain a high level of teaching expectations, we propose to integrate assessment strategies using teaching performance by direct observation, end-of-semester evaluations, and other surveys into the development and implementation of the hybrid orientation program.

The overall program integration will bring a new era of orientation programs for Teaching Assistants, Instructional Assistants, and other non full-time faculty at the University of Houston as well as other institutions.

**Key words:** hybrid technology, teaching assistants, orientation program, teaching methodologies.

### Introduction

At the University of Houston over 20% of the lower-level courses are taught by Part Time Faculty (PTF) such as Teaching Assistants (TAs)/Fellows and Instructional Assistants. In cases such as the Modern and Classical Languages department 100% of the Basic Spanish Program is

taught by PTF. Although the PTF have an advanced knowledge of the subject matter, many of the Teaching Assistants, in specific, have little or no experience in teaching; and their knowledge of the teaching methodology is most of the times limited at best. Only 38% of the TAs report having previous experience teaching at any level.

In order to address this issue, the Engineering Technology and Modern & Classical Languages Departments are currently developing a hybrid orientation program that will focus on providing a comprehensive, uniform, repeatable, and accessible source of instructional materials and tools factor that enhance the pedagogical practices of PTF. The hybrid orientation program comprises generic and specific training modules. The generic modules will address the methodological issues that are common to all PTF teaching at the university level regardless of their course's subject. The specific training modules will set up standard practices and approaches to the delivery of specific course contents. The new orientation program will allow the PTF to get comprehensive and uniform training that, we expect, will translate into better teaching practices and best overall instruction, which ultimately benefits students.

For this vision to become reality, our group is also participating with the Educational Technology and University Outreach (ETUO) Services to generate modules that can be seamlessly incorporated as part of the University's initiative to train Teaching Assistants. In particular, we wish to extensively utilize Internet-based resources for content delivery such as WebCT so that a hybrid solution approach can be developed. We advocate for generic pre-training modules accessible online followed by a face-to-face sequence of modules and workshops that are department specific.

The remainder of this paper is organized as follows. The first section presents the traditional orientation programs adopted by our university and other similar institutions. The second section discusses the proposed hybrid orientation program and its general and specific components. The third part presents samples of specific modules that are being implemented. It will end with some conclusion.

### **The Traditional Orientation Program**

Most of the departments across campus recognize the importance of training incoming and returning TAs and they conduct orientation sessions designed to assist PTF in their preparation for classroom or laboratory instruction. These orientation sessions attempt to cover many important issues including general university policies, roles and responsibilities, professional ethics and academic policies; as well as training on classroom management, effective speaking, development of lesson plans, and use of technology in the classroom among others. We have found that faculty and staff of the Engineering Technology and Modern & Classical Languages departments have independently developed orientation sessions that present, at some degree or another, some of the following problems.

- More than 50% of the time allotted for training is spent on covering university and administrative policies since it is mandatory for new PTF and yearly re-taking is mandatory for returning personal. After covering administrative/policy information, the

time left to cover teaching methodology is very limited. As a result, some TAs are asked to teach a class or direct laboratories with only a few hours of actual training.

- The training that TAs receive on the effective use of teaching materials such as textbooks, audiovisual equipment and resources is very limited.
- The orientation sessions are not consistent; they vary from semester to semester due to lack of funding or simply because of different approaches by the Faculty members in charge of the orientation.
- Some of the TAs cannot attend the days of the training sessions or attend just some days because it requires for students to quit summer jobs early and/or arrange early arrival to Houston, which in the case of international students is usually difficult.
- In spite the fact that PFT are in charge of teaching a considerable percentage of courses, there is little or no funding to better train them on classroom methodologies.
- Resources such as online course delivery are underutilized as a tool to train PTF.

A non exhaustive survey on the training of Teaching Assistants at different universities has shown that many institutions have functioning centers for excellence in teaching that conduct different types of training sessions and workshops. Some of them are mandatory and remunerated; others culminate in a Teaching Assistant Certification. For instance, the Ohio State University<sup>1</sup> has a mandatory and remunerated 3-week Graduate Teaching Assistant workshop for all new PTF, which involves all aspects related to the teaching methodologies. All theory and information on university policies for this program is web based and it is followed by a Mentorship program throughout the first semester of teaching. In other cases, the University of Calgary<sup>2</sup> has a mandatory and remunerated 2-week orientation involving microteaching and

lesson planning. At the University of Delaware, the Center for Teaching Effectiveness<sup>3</sup> sponsors the Annual Conference for Graduate Teaching Assistants followed by discipline specific preparation by various departments: Chemical Engineering, Foreign Languages, English, Physics and Biology. The University of Toronto<sup>4</sup> training sessions are offered through the Teaching Assistants' Training Program for interested parties.

### **The Proposed Hybrid Orientation Program Project**

The goal of this project is to lay the foundation for a training program that assures continuous PTF teaching quality. The project seeks to develop best teaching practices and standards in teaching methodology among our TAs. In addition, it emphasizes the desirable teaching qualities we wish to model. The pedagogical training is important part of the TA's formation since it is a desirable professional trait.

The basic components of the proposed Hybrid Orientation Program (HOP) include: online based pre-training and a face-to-face training modules. Figure 1 shows these training modules of our proposed hybrid instructional training and Figure 2 illustrates the internal components of these modules.

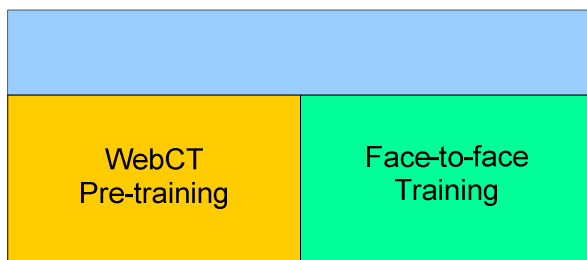


Figure 1. Proposed Hybrid Instructional Training

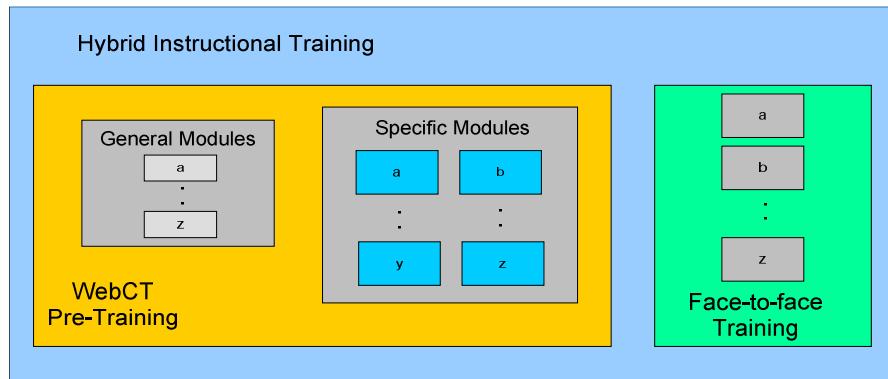


Figure 2. Proposed Hybrid Instructional Training internal modules

### Generic Orientation Program Modules

The generic orientation modules cover two main areas: i. the pedagogical aspects that are common to all the University's departments such as classroom management, effective speaking, development of lesson plans, and use of technology in the classroom among others; and ii. important administrative issues such as general university policies, roles and responsibilities, professional ethics, and academic policies and procedures. The possibility to deliver and access this information online will allow PTF to start the training from remote locations and at different times determined by their personal schedule and preferences. It will also give incoming TAs time to familiarize themselves with the information, at their own pace; avoiding in this way being overwhelmed with extensive information over short periods of time in addition to adjusting to a new country for some students.

The training modules are composed of a multimedia presentation followed by an interactive assessment section. The multimedia presentation conveys the topic's specific information; and the assessment part will help the trainees to determine their degree of comprehension of the contents. Since the faculty will have access to the results of the assessment, they will allow them

to determine whether the intended content was delivered in a clear way. Furthermore, it will serve administrators to certify that the PTF have undergone the instruction.

### **Generic modules: A case study**

The generic modules are designed to address the main pedagogical issues that Part Time Faculty face in the classroom. Those modules present guidelines and models of the best teaching practices at the university level. In addition, they present possible case scenarios of challenging situations and show PTF some strategies to solve those situations in a pedagogical manner.

One of the generic modules that will be shared by the departments of Engineering in Technology as well as the Modern and Classical Language is the module on Class Management Techniques.

The content of this module includes i. guidelines to enhance the effectiveness of lecturing. ii. functional language for delivering a lecture. iii. guidelines to giving clear oral instructions (indicative vs. imperative mode verbs). iv. Techniques for enhancing the clarity and effectiveness of explanations; and v. techniques for getting students to participate. Those contents will be presented using multimedia. After the presentation, the assessment part to measure content comprehension consists of the presentation of case scenarios in which the trainee has to choose among possible answers.

The content delivered online serves as an introduction to class management. In order to be effective, it has to be complemented with real interactions. In the case of our project, it is achieved through on campus workshops. In those workshops, face-to-face interaction and microteaching practices will provide TAs the pedagogical knowledge and the confidence necessary to carry on an effective class at the university level.

### **Department Specific Orientation Program Modules**

## **Engineering Technology**

The departmental specific orientation modules address the specific needs of each academic department. Generally they are course specific but could be general enough that several programs within a College can share them (See Figure 3). Within the Engineering Technology Department, for example, there is a common training module on general policies of the department, emergency and safety regulations, which will be used by the three programs: Computer Engineering Technology, Mechanical Engineering Technology and Construction Management Technology. Some more specific modules are subject specific. For instance the computer engineering technology program has specific training modules on soldering practices, how to improve wiring standards as well as training on various software simulation tools such as Simulink, Pspice, LabVIEW and so on. The mechanical engineering technology program on the other hand will have training modules on best practices of drafting, using various mechanical equipment and simulation tools. These departmental specific training modules may be delivered in various ways: using PowerPoint slides, short video clips (a clip of best soldering practice) or interactive CD/DVD. This approach considers the various learning styles of PTF which in turn encourages them for more engagement and creativity<sup>5, 6</sup>.

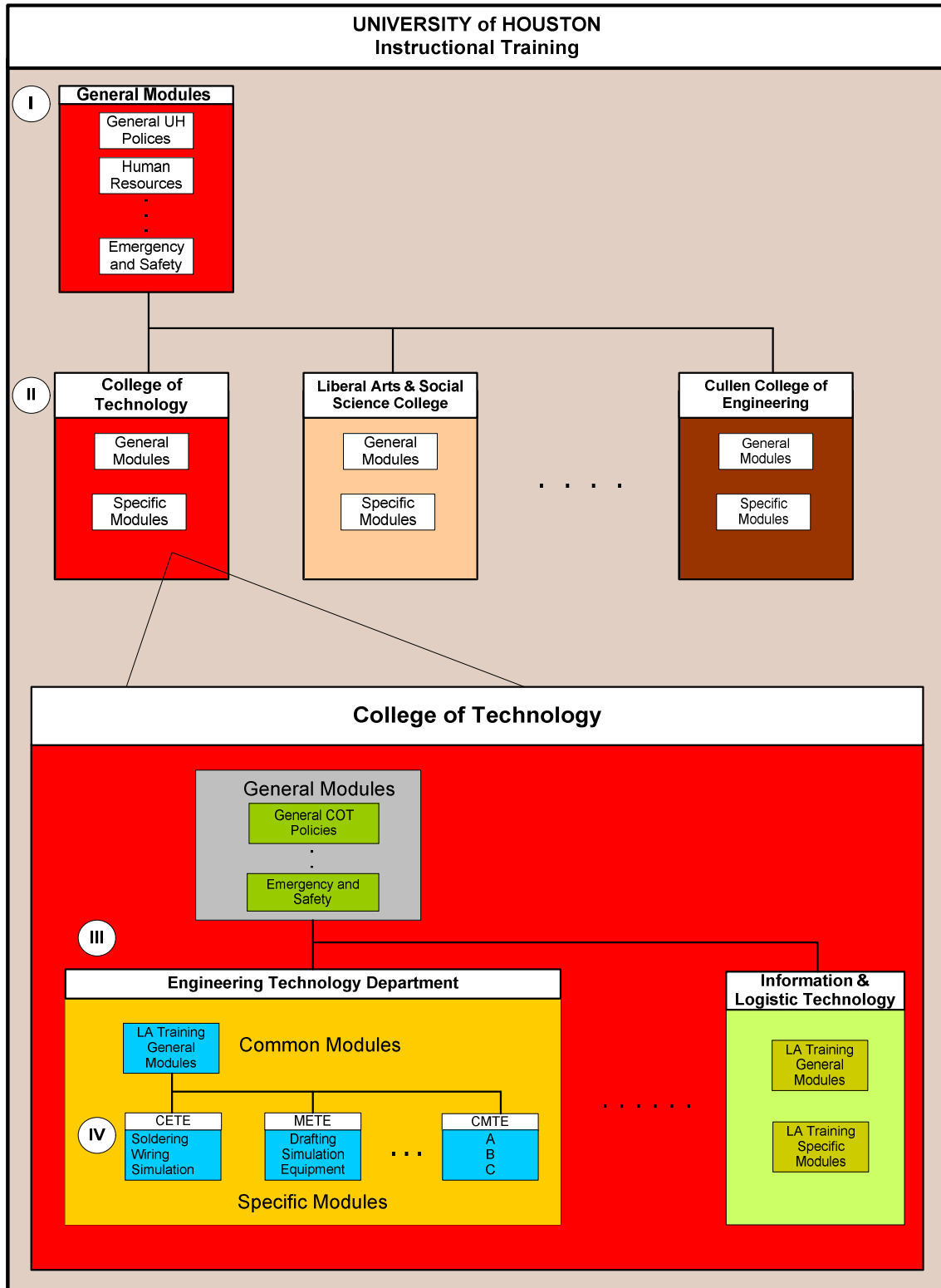


Figure 3. Generic and department specific training modules chart

## Modern and Classical Languages

A specific module developed for the department of Modern and Classical Language is Learning Vocabulary in a Second Language. The objective of this module is to make TAs aware of at least three strategies that can be used to effectively teach vocabulary in a second language class. In addition it presents the best way to structure an activity aimed to teach vocabulary.

Simultaneously, the module emphasizes the need for TAs to teach students about those strategies and how they can use them. Making learners conscious of learning techniques, in turn makes them aware of the learning process and motivates them to be in charge of their own learning process.

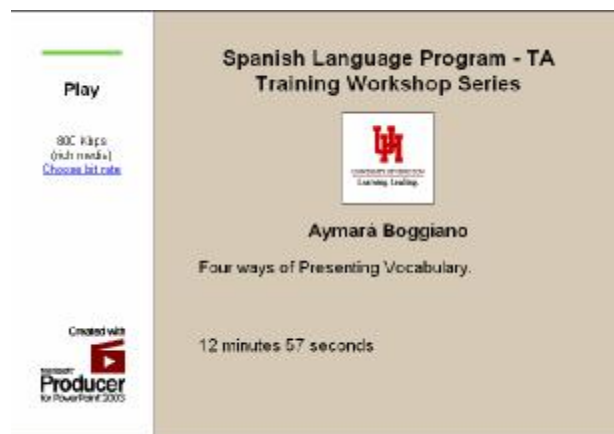


Figure 4. Snapshot of TA training workshop (ppt and video)

The delivery of the information in each module is made keeping in mind that different TAs have different learning styles. The contents of this module are presented using a Power Point Presentation that has embedded a video presentation as shown in Figure 4. In addition, the sound file of the presentation and the script of the presentation are also made available. In this way the presentation will appeal to visual learners –through the Power Point presentation and the video; and to auditive learners through the audio files. As with other modules, during on campus training there will be a workshop on teaching vocabulary. In this workshop, the TAs can put in

practice the strategies for teaching vocabulary (appealing to the more Kinesthetic and Tactile learners).

## Conclusion

The results presented here are from an ongoing project that is currently developing and implementing a Hybrid Orientation Program for PTF. The proposed *HOP* develops a uniform teaching methodology among our teachers and emphasizes the desirable teaching qualities we wish to model. Every effort made to better train the PTF will translate into better teaching practices and best overall language instruction, which ultimately benefits our students.

This project is developed in response to the necessity of several academic departments to train TAs on the best pedagogical practices in addition to using the internet as a tool to deliver training content that can be complemented with on campus workshops and microteaching sessions. The Department of Engineering in Technology bridges to the Modern and Classical Language to share expertise and resources.

The project's success will be assessed by a continuous quality improvement in student achievement, as well as student's and program coordinator's appraisals of overall PTF teaching performance. The assessment will be done by direct observation, end-of-semester evaluations, and surveys. The final goal is to achieve and sustain teaching excellence in the MCL basic language courses and in ET's freshman and sophomore laboratory courses. We expect to implement the Hybrid Orientation Program as tool that will contribute in the formation of TAs as future professional and also to improve teaching practices of PTF which will benefit our students.

## References

- [1] .“The OSU foreign Language Center”, The Ohio State University, Columbus, OH; available HTTP: [http://flc.osu.edu/flc\\_site/gta.html#](http://flc.osu.edu/flc_site/gta.html#).
- [2] .“First Stop for Academics’ Professional Development”, University of Calgary, AB, available HTTP: <http://www.ucalgary.ca/VPA/newfacres/>
- [3] .“TA Training and Development”, Center for Teaching Effectiveness, University of Delaware Newark, Delaware; available HTTP: <http://cte.udel.edu/tatraining.htm>.
- [4] .“Teaching Assistants’ Training Program”, University of Toronto, Toronto, ON; available HTTP: <http://www.utoronto.ca/tatp/whoware.html>.
- [5] .Lawrence E. Carlson and Jacquelyn F. Sullivan, “Hands-on Engineering: Learning by Doing in the Integrated Teaching and Learning Program,” Int. Journal Engineering Education, Vol. 15, No. 1, pp. 20-31.
- [6] .“BEST: Building Engineering & Science Talent”, Center for excellence in Engineering and Diversity, University of California, Los Angeles, available HTTP: [http://www.bestworkforce.org/PDFdocs/BEST\\_High\\_Ed\\_Rep\\_48pg\\_02\\_25.pdf](http://www.bestworkforce.org/PDFdocs/BEST_High_Ed_Rep_48pg_02_25.pdf)

### MEQUANINT MOGES

Dr. Moges currently serves as an Instructional Assistant Professor of Engineering Technology at the University of Houston in Texas. His area of expertise includes design and optimization of wireless sensor networks, performance evaluation and optimization of computer and communication systems and job scheduling in parallel and distributed systems and computational grids.

### VICTOR GALLARDO

Mr. Gallardo is the Instructional Lab Manager for the Computer Engineering and Electrical Power programs (also he is a Ph.D. candidate in Electrical Engineering). Mr. Gallardo current research interest includes adaptive optics, real time image processing with applications in human and computer vision, as well as reconfigurable instrumentation. He is co-founder of CORE (Coordination Of Robot Education) and has authored or coauthored more than 30 technical papers, technical reports, and applications reports.

### ENRIQUE BARBIERI

He received the Ph.D. in Electrical Engineering from The Ohio State University in 1988. He served on the faculty of the Electrical Engineering and later Electrical Engineering & Computer Science at Tulane University from 1988-2002 where he was a tenured Associate Professor and Chair of the Department (1996-98). In 2002 he joined the Department of Engineering Technology at the University of Houston as Professor and Chair. His research interests are control and applications to electromechanical systems. He is a member of IEEE and ASEE and serves on the Executive Council of the Texas Manufacturing Assistance Center – TMAC Gulf Coast Region at the University of Houston.

### AYMARA BOGGIANO

Lecturer of the Spanish Language Program at the University of Houston

### CARLOS RAMIREZ

Director of the Spanish Language Program at the University of Houston