

Special Session - Constructive Academic Controversy: The Art of Arguing to Enhance Learning

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Abstract – This special session provides an opportunity for participants to learn about a cooperative learning strategy through actively engaging in that strategy. Participants will experience Constructive Academic Controversy from the learner perspective and will have an opportunity to reflect on this experience. The combination of experience and reflection will help participants identify how Constructive Academic Controversy (and related pedagogies) could be used in their own classrooms to enhance students' learning, critical thinking, and learning experiences. Further, through the shared experience of practicing Constructive Academic Controversy in a special session, participants will identify a group of peers from whom they can seek guidance in the future.

Index Terms – Cooperative Learning, Constructive Controversy

INTRODUCTION

Constructive Academic Controversy was introduced to the engineering education community in the early 1980's [1]. The approach was enthusiastically received, based no doubt in part on its theoretical and empirical support, and the authors were invited to conduct a workshop at a subsequent FIE Conference [2]. Again the approach was eagerly embraced. However, it hasn't been implemented in engineering classrooms to the extent many other cooperative learning strategies have, such as informal cooperative learning or cooperative problem-based/project-based learning. We speculate that this is due to the complexity of the approach, which requires deep understanding of formal cooperative learning, and perhaps because it focuses on constructively managing conflict (and many students it seems try to avoid conflict). This session proposes to reinvigorate Constructive Academic Controversy by reintroducing this learning tool to the engineering education community. Participants will learn how to conduct a Constructive Academic Controversy in their own classroom by participating as a student in this special session.

Constructive Academic Controversy is a form of cooperative learning where students work in advocacy subgroups to master content and then engage in a constructive dialogue where they articulate their arguments, rebut others'

arguments, and strive for a common goal of making a recommendation or, at a minimum, articulating the best arguments on all sides. In the process they learn about skillful arguing. Teamwork and the ability to craft and convey effective arguments are very important skills in this global era of fast-paced technological change.

SESSION CONTENT

The topic of discussion will be "Do the skills defined by ABET define engineering?" Workshop participants will be assigned to teams. Within each team, one pair will initially argue that ABET criteria [3] do fully define the roles of practicing engineers and one pair will argue that this is not the case. The pairs will then switch roles. Finally the pairs will work together to reach a consensus. Participants will be provided with some reference materials which they can use to construct their arguments. Following the constructive academic controversy activity, there will be time for reflection on the activity itself, as well as on ways to incorporate Constructive Academic Controversy in classroom activities.

SESSION GOALS

This session will provide participants with a collaborative learning environment where they will:

- Become familiar with the origins and benefits of Constructive Academic Controversy as a cooperative learning strategy as well as the empirical and theoretical support
- Actively participate in a Constructive Academic Controversy activity
- Develop a community of colleagues to support the development and practice of Academic Constructive Controversy.

ANTICIPATED AUDIENCE

The anticipated audience includes educators who are interested in actively participating in a collaborative learning strategy that they could then apply in their own classrooms. Noting the success of past workshops by Karl Smith and John Heywood [4, 5] where participants actively engaged in exploring engineering education philosophy, participants

interested in engaging in lively conversations on defining engineering may also enjoy and benefit from attending.

EXPECTED OUTCOMES

At the completion of this special session, it is anticipated that participants will be able to:

- Articulate the benefits of and identify potential opportunities for conducting Constructive Academic Controversy in their own classrooms
- Describe conditions and guidelines for skillful arguing and convey them to their students
- Articulate their own definition of “engineering outcomes” by distinguishing their definition from other possible definitions

REFERENCES

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