Statement of Purpose

A unit on applications of linear equations within an introductory algebra course demonstrates the true nature of math as symbolic language used to describe the physical word. Students in my math courses respond to real applications of the math concepts, even though they do not necessarily adore word problems. There is a connection between math and problem solving skills and an employee’s overall earning power (Lappan 1999). COTC’s mission is focused on training citizens to fill the staffing needs of the area. The general curriculum philosophy of COTC is a mix of essentialism and perennialism, while the education philosophy of content delivery varies widely among instructors. The college dictates the content of our instruction while the particulars of the mode of delivery are very much in the hands of the instructors.

Central Ohio Technical College (COTC) offers over fifty degree programs with articulation agreements with more than a dozen four-year institutions (COTC 2012). COTC is an open enrollment institution and serves a large population of nontraditional students who are seeking a career change or advancement in their current field. COTC’s mission is “is to meet the technical education and training needs of students and employers in the [Licking, Knox, and Coshocton counties] (COTC 2012). COTC strives to meet these needs by offering developmental courses to students who are underprepared for college level course work at the beginning of their college career. Developmental course are necessary to groom students reentering academics or who were under prepared in secondary education. Without these preparatory courses, many students would not be prepared to complete college level coursework to complete their educational goals.

Math 1205 is a developmental math course designed as the second course in the three course series to prepare students to complete Math 1215 the first college level algebra course required by most undergraduate degree programs. This unit on applications of linear equations is the type of problem solving that many people encounter in their everyday lives and solve in an intuitive manner. This unit gives the student proper terminology for the problem types they are seeing, and helps them identify strategies for solving these problems. For students entering the medical or science field, these problems are preparing students to see the application of math concepts that will be further developed in the science classroom also.

This course series was designed based on the perennialist philosophy for math that demands proficiency in algebra. The course objectives show some progressive emphasis on problem solving, especially in this unit. I try to teach this unit with the idea that the students are thinking through the problems and devising a strategy to solve the problem in front of them. The course design is set up so the problems are compartmentalized into problem types which have a specific process for solving. Despite my opened ended in questions in lecture and allowing for students to speak out about what they can do to set up and solve the problem, I often find my students gravitating toward the essentialist formulaic problem solving methods. While this philosophy is less in tune with my own emphasis on meta-cognition and applying the known to the unknown situation, the essentialist philosophy is prevalent at COTC and follows a direct line to attitudes my students will find in the local employment market. As we move further into the 21st century, these essentialist attitudes will evolve in the workplace and the educational institutions will have to evolve their education practices to stay in tune with the local society.

References

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