TEACHING TECHNOLOGY IN THE FOCUSED CALENDAR

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INTRODUCTION

Tusculum College has engaged in a process of examining and reviewing its programs which has resulted in a significant and far reaching transformation of the curriculum and the campus culture. Under the heading, *Civic Arts*, five principal reforms have been inaugurated since the fall of 1991: the Commons, a set of interdisciplinary courses required for all students; the Competency Program, where students demonstrate competency in 9 areas prior to graduation; Self-Governance, in which the college is governed by committees composed of students, faculty, and staff; the Civic Arts Project, where students complete an 80-hour service project prior to graduation; and the Focused Calendar, where all courses are taught one at a time for a duration of 18 days. This paper will focus on the pedagogical changes necessary to teach technology under the focused calendar environment. This is timely because many higher education institutions are currently reexamining both curricula and programs.

THE FOCUSED CALENDAR

Tusculum College is one of three colleges in the nation to utilize the focused calendar. The focused calendar is often referred to as the "block program" because courses are offered in "blocks" of time. Each block consists of an 18-day period, or 3 ½ weeks, during which students take one 4-hour credit course at a time (and instructors teach one course at a time). Classes meet an average of 3 hours per day for each of the 18 days giving a total of 54 contact hours per course. There are four blocks per semester, allowing students the opportunity to earn 16 credit hours per semester. Students may also take a 1-hour activity course each block if they so desire. In addition, there are several courses that span the semester.

There were several reasons for implementing the focused calendar. An important aspect for many of our courses, especially in the science field, is the opportunity for field trips. Many of the disciplines have incorporated field experiences into the curriculum and several have been designed to last an extended amount of time (as much as 2-3 weeks). There is more opportunity for supervised hands-on coursework and greater opportunity for the teacher-student relationship to be cultivated. The students have an advantage in that they only have to focus on one course at a time. This gives the students the opportunity to learn the material better because they are in class every day and do not have to juggle their time between courses.

TECHNOLOGY AND THE FOCUSED CALENDAR

The Computer Information Systems/Computer Science curriculum is similar to that of other institutions. All CIS/CS majors must complete Introduction to Computing, Introduction to Programming, Data Structures and Algorithm

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Analysis, Database Management Systems, and Systems Analysis and Design. Other courses in the curriculum include Operating Systems, Data Communications and Networking, Programming Languages, Computer Organization, Physical Design and Implementation, Systems Development Project, and Internship in Computer Science. Teaching technology courses in the focused calendar involves significant changes in pedagogy, opportunities for implementing a variety of instructional paradigms, and challenges for coping with the potential problems inherent in the learning environment.

The primary difference between teaching technology at Tusculum College and teaching technology at a more traditional college is the pedagogy employed to convey the necessary information without overwhelming the student. Having taught for 8 years at a traditional university, I found it challenging to make the transition to teaching in the focused calendar. The major pedagogical changes involve the method of delivery, the number of assignments, and the types of assignments.

Since each class day lasts an average of three hours, as opposed to 50-75 minutes, it is imperative to modify the traditional method of delivery. Although it may be possible to lecture for three hours, students are unable to absorb that much information, especially when it is difficult, technical material. A typical day of technology in the focused calendar involves approximately 60-90 minutes of lecture, with the remaining time spent in the computer laboratory working on assignments.

The number and types of assignments given in the focused calendar differ from the number and types of assignments given in a traditional calendar. At a traditional university, students may be given 5-7 rather comprehensive assignments, each scheduled to take approximately 2-3 weeks. That, of course, is impossible to do in the block program. Assignments take the form of shorter, less comprehensive assignments, which allow the students to demonstrate understanding of a specific topic. Typically, the students are given daily assignments, some of which may take the form of written exercises, while others are completed using a computer.

Although the method of delivery and the number and types of assignments made can be viewed as significant changes to pedagogy, there are other approaches that may be used to exploit the advantages of the block program. The focused calendar provides substantial opportunities for implementing a variety of instructional paradigms in order to convey the necessary information, including building upon the concepts of previous courses, utilization of hands-on exercises, and collaborative learning.

Much thought and planning has gone into the scheduling of classes in the focused calendar. The computer curriculum has been planned such that students take the Introduction to Computing (which focuses on problem-solving and algorithm development), Introduction to Programming, and Data Structures and Algorithm Analysis courses consecutively, and in the same semester. The advantage of this approach is that there are opportunities to build immediately upon the concepts that are covered in the previous course(s). Typically, the same

instructor teaches all three courses so there is also the opportunity for continuity amongst the course concepts and the course contents.

Teaching technology in the focused calendar almost dictates utilizing hands-on exercises and collaborative learning as a method of conveying information. As stated earlier, it is impossible to lecture for three consecutive hours, 18 days in a row. Therefore, hands-on exercises are a way to have students practice, under the guidance of the instructor, the concepts that have been taught. Many of the courses utilize group work in order to convey the information and to introduce the students to the concept of collaboration. Most students believe that upon graduation they will be working on computers in isolation. The focused calendar provides the opportunity to mimic a more "real world" environment.

Although the focused calendar provides many opportunities for utilizing a variety of instructional paradigms, there are significant challenges for coping with the potential problems inherent in the learning environment. These challenges include facility management, conflict with other activities, lack of time for absorbing the material, and, most noticeably, the lack of time for problem-solving and critical thinking.

One of the challenges of teaching technology in the focused calendar involves resource management. We, like most other colleges, have limited facilities, and scheduling two facilities amongst three classes a block has proven to be a challenge (and this does not include the non-computer classes that want to utilize technology). The students also have the challenge of juggling their schedule between class, athletics, work-study, jobs, and, of course, time to study for the next day.

The two biggest challenges of technology and the focused calendar are the lack of time for absorbing the material and the lack of time for problem-solving and critical thinking. The courses in the computer curriculum are technical in nature. It is difficult for the students to read and absorb large amounts of technical information. It is also extremely difficult for students to solve problems effectively in such a short amount of time. The focused calendar forces the students to think faster, thus reducing the time available for critical thinking.

CONCLUSION

Teaching technology in the focused calendar offers many benefits that are not found in a traditional calendar. Instructors have the opportunity to provide more of a "real world" environment in terms of collaborative learning. The focused calendar presents one major problem for teaching technology. Technical courses, especially the ones involving programming, require time for the students to exercise their problem-solving abilities. The students, for the most part, do not have adequate time to accomplish effective critical thinking.

A modification of the block program, perhaps courses spanning two blocks, may be a solution to the problems inherent in teaching technology in the focused calendar. This could provide many of the same benefits while also allowing more time for problem-solving and critical thinking. We at Tusculum College are constantly reevaluating our curriculum and many opportunities exist for improving education in the focused calendar.