

# Comparison of Faculty Workload in Resident and Distance Environments: The Case of a Turfgrass Management Course

A. J. Turgeon\* and Melody M. Thompson

## ABSTRACT

Concerns about faculty workload in the online environment are a reported deterrent to participation in distance teaching. To date, such concerns have been based primarily on anecdotal evidence rather than empirical research. This paper presents results of a study directly comparing the instructional workload in a turfgrass management course taught by the same instructor in two different formats: resident (face-to-face) and distance (online). Comparing the two environments, faculty workload was comparable or less in the distance environment while student achievement, as evidenced by final grades, was similar.

A GROWING BODY OF LITERATURE portrays the distance (online) teaching and learning environment as a personally rewarding and satisfying one for many faculty members (Frederickson et al., 2000; Hartman and Truman-Davis, 2001; National Education Assoc., 2000; Thompson, 2001). Thompson (2003) lists a number of specific positive factors reported by faculty members teaching at a distance:

**Increased Access To/By Students.** Many faculty members report that increasing students' access to higher education is one source of satisfaction. Increasing their program's or institution's access to students is a related but different cause for satisfaction. A recent update to the National Education Association's (NEA) national survey of distance education faculty reported that increased access "was by far the most frequently mentioned positive thought about distance education" (National Education Assoc., 2000).

**Increased Opportunities for High-Quality Interaction with Students.** Faculty members report being pleasantly surprised to find that distance teaching in many cases offers opportunities for more and better interaction with individual students and groups of students, as well as among the students themselves (Kashy et al., 2000; Smith, 2001; Hartman et al., 2000; National Education Assoc., 2000).

**Flexibility and Convenience of Teaching and Learning.** Faculty members appreciate the additional flexibility offered by distance learning environments both for themselves and for their students. Being able to teach on schedules and in locations of their own choosing is a major source of faculty satisfaction (Hartman and Truman-Davis, 2001).

**Increased Knowledge of and Experience with Educational Technologies.** Instructional technologies support pedagogical innovations that increase faculty effectiveness and,

therefore, satisfaction. Faculty report that this benefit extends beyond their distance teaching into their resident classes (Frederickson et al., 2000; Rockwell et al., 1999; Thompson, 2001).

**Opportunities for Research and Professional Recognition.** Faculty members are under considerable pressure to conduct research and publish in their fields. Distance teaching is providing new opportunities for faculty members to meet this professional expectation (Hartman and Truman-Davis, 2001; Hislop and Atwood, 2000).

**Positive Student Outcomes.** The potential of distance instruction to generate high student achievement is an important factor in faculty satisfaction. The reported experiences of an increasing number of faculty members who teach online reflect high levels of faculty satisfaction with student learning outcomes (Hartman et al., 2000; National Education Assoc., 2000; Thompson, 2001).

Reports of benefits are often matched by expressions of faculty concern, however. One prevalent area of concern relates to the perceived heavier workload of faculty members teaching at a distance. With few exceptions (see, for example, DiBiase, 2003), the literature reports that distance teaching is more time intensive than face-to-face resident teaching (Clay, 1999; Hartman and Truman-Davis, 2001; Hislop and Atwood, 2000; National Education Assoc., 2000; Thompson, 2001). This perception is reported to be a major deterrent to participation by those faculty members who can "opt out," and an inhibitor to satisfaction among those who have no choice or who choose to teach at a distance, even given the increased effort demanded (Rockwell et al., 1999; Schifter, 2002; Smith, 2001).

Ensuring a reasonable allocation of the instructor's time, along with a high-quality learning experience for distance students, requires careful planning and organization. However, the planning and implementation are necessarily different for the distance environment, where the quality of the communication, as well as the quality of the learning resources employed, must be sufficient to compensate for the absence of face-to-face contact between the instructor and his/her students, and among the students. Does this difference necessarily translate into an increased workload for the faculty member teaching online? In other words, just how real is the perceived increase in workload in the distance environment? Is it truly more work to teach online or does it seem like more work because it is an unfamiliar experience? Some reports suggest that while the workload involved in *development* is admittedly greater for distance instruction, the *delivery* of instruction, after an initial learning period, is comparable to or, perhaps, even less labor intensive than face-to-face resident instruction (e.g., DiBiase, 2000). Other reports reflect a perception of increased delivery workload (due primarily to expectations for interaction and course-administration demands) and lower levels of faculty satisfaction with distance teaching or resistance to participation (Clay, 1999; Rockwell et al., 1999).

A.J. Turgeon, Dep. of Crop and Soil Sciences, 116 ASI Building, The Pennsylvania State Univ., University Park, PA 16802; and M.M. Thompson, Distance Education Dep., 211A Mitchell Bldg., The Pennsylvania State Univ., University Park, PA 16802. Received 6 Jan. 2004. \*Corresponding author (at2@psu.edu).

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677 S. Segoe Rd., Madison, WI 53711 USA

## Significance of the Problem

Coming to a clear understanding of workload issues in the distance environment is important for two reasons. First, fulfilling the promise of the new forms of teaching and learning made possible by distance communication channels and resources can be realized only through a strong faculty commitment to teaching in this new environment. Barriers to participation and satisfaction will need to be removed to encourage and support this commitment. Second, institutional administrators need to understand distance-teaching-workload issues in order to make equitable teaching assignments and to fairly reward effort, particularly in terms of compensation and promotion and tenure decisions. However, as the American Association of University Professors (1999) points out, the “common wisdom” related to workload is based almost exclusively on anecdotal evidence. Although they recommend taking this evidence into account when establishing workload policy, they further recommend that institutions conduct institution-specific research to establish a solid basis for future decision-making.

## Description of the Study

Following this recommendation, the Penn State World Campus, with support from the Alfred P. Sloan Foundation, initiated a project to help faculty members and administrators better understand workload issues in the distance environment. Through an RFP process developed and implemented by the second author of this paper, proposals to compare the workload in resident and distance courses were solicited from faculty members teaching both residence and distance courses within their respective colleges and through the Penn State World Campus, respectively. To factor out the “learning curve” and its major impact on the workload of first-time distance instructors, selection of researchers was limited to those who had taught the courses to be studied at least once before the beginning of the workload study. Selected faculty members were provided with funding (\$4000 each) to support studies that documented and analyzed (i) categories of instructional tasks performed in each environment, (ii) the time spent on each task, and (iii) comparative workflow in the two environments. This report presents the results of one of these studies, conducted by the first author in a Turfgrass Management course.

## Course Description

TURF 436 (Case Studies in Turfgrass Management) is the “capstone” course taught to resident turfgrass science majors at Penn State’s University Park campus and to distance students enrolled in the Turfgrass Management Certificate Program offered through the Penn State World Campus. Both versions of the course employ decision cases developed by the instructor in cooperation with colleagues involved in the management of golf, sports, and lawn turfs. The decision cases have links to instructional modules that provide background material to help students understand the scientific basis for the problematic situations presented in the cases.

All students are expected to be “active” learners by conducting detailed analyses of the cases, identifying the issues emerging from their analyses, proposing and evaluating strate-

gies for addressing those issues, and developing a detailed action plan for implementing the strategy or strategies selected. Students in both versions of the course work in groups in order to learn from each other (as well as from the instructor); thus, working the cases involves both active and collaborative learning.

The resident and distance versions of the course differ in several important respects. In the resident version of the course, students are organized into groups of three (sometimes four) members, while distance students are organized in groups of six (sometimes seven) members. This difference in group size exists because of differences in the way the groups interact. In the resident version of the course, students make presentations to the class and submit written reports *as a group*; thus, the coordination required for accomplishing these tasks is facilitated by the smaller groups. In the distance version of the course, which employs entirely asynchronous communication, students do not make “presentations,” and their reports are prepared and submitted *individually*; most interaction within a group involves members posing questions to each other based on the composition of their respective reports, responding to the questions, and revising their reports based on this interaction. Here, the larger groups ensure a richer interaction and exchange of information.

In both versions of the course the instructor directs questions to the students; however, in the resident version this is done before the entire class, while in the distance version, it is done within groups following the submission of revised reports. Finally, in the resident version of the course, following completion of an “orientation” case, the class works on a total of seven cases, with three groups assigned one case each; then, each group develops and presents a “topic” case, based on experiences acquired by one or more of the group members. In the distance version, each student selects and works a total of three cases following completion of the orientation case; then, each develops a topic case from his/her own experiences in the field.

## Research Methodology

Detailed records were kept during spring semesters of 2002 and 2003 of the preparation and contact time required for teaching both versions of the course. This was done through daily logs from which the data were summarized at the end of each semester. During the spring semester of 2003, quantitative assessments of the comparative performance of resident and distance students in exams were made at the beginning of the course, and after completion of the orientation case 4 weeks later. The pre- and post-tests consisted of a combination of multiple choice and essay questions on the topics covered in the orientation case. Approximately 2 hours were required for processing each of these tests.

## RESULTS AND DISCUSSION

In spring semester 2002, enrollments in Turf 436 were 54 resident students and 30 distance students (Table 1). The total number of instructor hours spent for the resident and online versions of the course were 137.5 and 65, respectively. This amounted to 2.6 hours per resident student and 2.2 hours per distance student.

**Table 1. Comparison of resident and distance versions of TURF 436 course in spring, 2002.**

Variable	Resident version	Distance version
Course duration	15 weeks	12 weeks
Students enrolled	54	30
Groups	18 with 3 members each	5 with 6 members each
Contact frequency and time	three 50-minute classes per week plus 20 minutes walking time and an average of 1 hour of individual contact with students per week, for a total of 67.5 hours	login every morning and about half of all evenings totalling 10 logins per week, averaging 20 minutes each for a total of 40 hours
Number of exams	two 1-hour exams and one 2-hour final exam	none
Time spent grading exams	10 hours for me (essay questions) and 3 hours for my assistant (multiple choice questions)	none
Class preparation time	average of 3 hours per week for a total of 45 hours	none
Number of cases discussed	1 orientation case, 7 selection cases, and 18 topic cases	1 orientation case, an average of 7.4 selection cases, and 6 topic cases
Individual reports submitted	1 orientation case per student	1 orientation case, 3 selection cases, and 1 topic case per student
Group reports submitted	1 selection case and 1 topic case from each of 18 groups	none
Time spent grading reports	9 hours for orientation case reports, 3 hours for selection case reports, and 3 hours for topic case reports, for a total of 15 hours	5 hours for orientation case reports, 15 hours for selection case reports, and 5 hours for topic case reports, for a total of 25 hours
Total time spent	137.5 hours	65 hours
Time per student	2.6 hours	2.2 hours

**Table 2. Comparison of resident and distance versions of TURF 436 course in spring, 2003.**

Variable	Resident version	Distance version
Course duration	15 weeks	12 weeks
Students enrolled	46	48
Groups	15 with 3 members each	8 with 6 members each
Contact frequency and time	three 50-minute classes per week plus 20 minutes walking time and an average of 1 hour of individual contact with students per week, for a total of 67.5 hours	login every morning and about half of all evenings totalling 10 logins per week, averaging 30 minutes each for a total of 60 hours
Number of exams	two 1-hour exams and one 2-hour final exam	none
Time spent grading exams	8.5 hours for the instructor (essay questions) and 2.5 hours for the assistant (multiple choice questions)	none
Class preparation time	average of 3 hours per week for a total of 45 hours	none
Number of cases discussed	1 orientation case, 7 selection cases, and 18 topic cases	1 orientation case, a total of 13 selection cases, and 48 topic cases
Individual reports submitted	1 orientation case per student	1 orientation case, 3 selection cases, and 1 topic case per student
Group reports submitted	1 selection case and 1 topic case from each of 15 groups	none
Time spent grading reports	7.5 hours for orientation case reports, 2.5 hours for selection case report, and 2.5 hours for topic case reports, for a total of 12.5 hours	8 hours for orientation case reports, 24 hours for selection case reports, and 8 hours for topic case reports, for a total of 40 hours
Total time spent	136 hours	100 hours
Time per student	3 hours	2.1 hours

**Table 3. Comparison of resident and online student performance in turfgrass case-studies courses.†**

Test type	Course type		
	Resident	Online	
Pre-test score	60	56	NS‡
Post-test score	88	88	NS
	S‡	S	

† *P* values for test type and course type were <0.0001 and 0.2831, respectively.

‡ S = significant; NS, nonsignificant.

In spring semester 2003, enrollments in Turf 436 were 46 resident students and 48 distance students (Table 2). The number of hours spent for the resident and online versions of the course were 136 and 100, respectively. This amounted to 3.0 hours per resident student and 2.1 hours per distance student.

Thus, in the resident course, the time spent on the course by the instructor decreased only slightly with decreasing enrollment, while the time spent per student increased substantially. This situation reflects the fact that a large portion of the time spent on a resident course is constant and that student numbers influence only that portion of the course spent on grading reports and exams. Conversely, in the distance course the time spent on the course increased substantially with increasing enrollment, while the time spent on each student decreased only slightly. This result reflects the fact that a large portion of the time spent on the course is dedicated to monitoring and responding to individual students and is thus dra-

matically influenced by the number of students enrolled. Also, the amount of time spent per student is only slightly influenced by enrollment, as there are relatively few activities that are constant and thus independent of enrollment.

With respect to the issue of the efficacy of distance instruction, the post-tests administered to both distance and resident students yielded the same average grade of 88 out of 100 (Table 3). Given the lower average pre-test score of distance students (i.e., 56 vs. 60), the distance students actually realized a slightly greater improvement in their cognitive skills from the instruction.

## CONCLUSIONS

Contrary to reports found widely in the literature, this study has demonstrated that for a turfgrass management course, the instructional workload in the distance and resident environments is comparable, indeed with the online version representing a somewhat lesser workload. Comparable results also were demonstrated in student learning outcomes, with distance students achieving at the same level as their resident peers, while showing on average a slightly greater improvement in skills. The results of this study contribute to our knowledge of the experience of faculty members in the distance environment. While it examined only the delivery phase of instruction, as opposed to the course development phase, the outcomes of the study suggest that concerns relating to workload in teaching distance courses may be exaggerated.

The experience of the course instructor suggests that careful advanced planning can allow distance instructors to organize and deliver their distance courses in a way that makes them both manageable and educationally effective.

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