Self-Paced Instruction in Introductory Logic: A Report

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A few students find that logic is one of the easiest courses they have taken in college while others with great effort finally manage to slip by. It seemed to me that in the regular classroom presentation of the course the better students were held back by the pace of the course, while I had to move too rapidly for the slower-to-catch-on students. There is a body of material usually covered in a first course in logic, and some sections of the course are more difficult for some students than others. I decided to experiment to see if the course could be personalized in the sense that a student could work at his own pace without class attendance.

At my college the course is taught as an elective open to all students at the sophomore level or above. While we offer a number of tutorial and independent study courses, this was the first time a course with a fairly large enrollment was to become an independent study course. The college's usual requirement of class attendance for all students below a certain grade level was waived for this class.

The first week of the semester an orientation meeting was held so that the exact nature of the course was clear to everyone. In order to have a basis of comparison, I chose to use the same textbook and cover the same topics as I had covered the previous time I taught the course in a classroom situation. As I had changed the text for the previous semester, I had taught only one semester of regular classroom logic by this text.

I planned for the student to study logic according to the following procedure. (It should be noted that since the basic purpose of the course is to learn manipulative skills the emphasis is not on content.)

(1) The student reads the section in the text[1] which discusses the principle under consideration. A syllabus prepared for this experiment divided the material into 45 segments (the usual number of class meetings for a three semester hour credit course at this college) and gave explicit instructions on what to do. While the student set the pace, the 45 segments of the course obviously indicated a suggested pace.

(2) The student reads the discussion of the principle in the workbook and attempts the exercises in the workbook.[2] He works as many of the exercises as he thinks he needs to work in order to understand the principle. These practice problems are self-grading.

(3) He works the exercises in the textbook under self-test conditions. The answers as well as the method of working and grading each problem are explained in the syllabus. The student grades his own work.

(4) He posts his grade for each exercise in the appropriate blank on the course progress sheet hanging on the departmental bulletin board. This was for the instructor's benefit, so he could watch the progress of the students.

(5) Six video-tape lectures had been prepared and students were instructed by the syllabus to watch each one at a specific point in the course. These lectures were made on points that previous students had found difficult to understand. The taped lectures were available from the departmental secretary who instructed the students in the use of the machine.

(6) The instructor was available for help during the regular academic day. Students either telephoned or came to the instructor's office.
(7) The student could work at his own pace and finish the course shortly or spread out the work over the whole semester. The work had to be completed during the semester the course was begun.

The final grade of the course was based on three one-hour examinations which the student took when he had finished the appropriate section, and a final examination of three hours.[3] At the time of the final examination, the student was asked to complete a course evaluation sheet which was collected by a designated student. Of the 91 students (by semesters: 31, 19, 24 and 17) who enrolled in the course during the four semester experiment, 51 completed an evaluation form. The items of interest for this discussion follow:

(A) Did this method of teaching stimulate your interest in logic?[4]

: 22%	: 18%	: 26%	: 22%	: 12% :
Definitely Yes				Definitely No

(B) How do you feel about your mastery of the material by this independent study method as compared to a classroom method?

: 8%	: 20%	: 30%	: 22%	: 20% :
Definitely More		About the Same		Definitely Less

(C) Would you recommend this self-study logic course to a friend?

Yes 67% No 33%

Comments: I did. He has since tried to kill me!
No, because of human weakness to put things off to the last minute.
Depends upon the friend-Yes, if motivated and a good student.

(D) List features of the course which you found to be of great value and should be repeated in future classes.
The self-study approach - I wanted to try it, and now I know what it is. (I don't like it, but others would thrive on it).
Ability to do the work at your own pace.
Every student should take advantage of an opportunity to take a self-study course.
Video tapes.
Leave the course as it is.

(E) List features of the course which should be omitted in future classes.
Video tapes were not particularly helpful.
Self-study approach. Logic should be taught in the classroom.

(F) How would you wish to improve the course?
Keep as it is.
Less work.
More tests.
Deadline by which hour exams *must* be taken.
Some class meetings.

(G) Give an overall evaluation of your experience in the course.

Excellent	Very Good	Good	Fair	Poor	Very Bad
14%	21%	47%	14%	4%	—

The feature of the course which I personally thought was the most innovative was the prepared video-tape lectures which students could view at points where they were likely to encounter difficulty. The difficult points were based on my previous experience in teaching. Through conversations with students, it was determined that generally it was the better student who liked the tapes, although some students who were having difficulty liked the privilege of repeating the tape until they caught on. Opinion varied widely.

Did the video-tape lectures aid your understanding of the material?

:	6%	:	7%	:	31%	:	40%	:	6%	:
Definitely Yes									Definitely No	

The video-tape aspect of the course appeared on both the list of things found to be of great value in the course and also the list of features to be deleted.

At a relatively small school, the students are able to obtain a considerable amount of information regarding individual courses. After running the experiment for four semesters and finding that many students did not like the self-study method, the course is now offered in the regular classroom manner by another professor for the students who prefer this mode of presentation.

The teaching of the course under this personalized procedure required more effort on the part of the instructor than the formal classroom presentation. Initially, a great amount of time was expended in preparing the syllabus and the video-tapes. As only minor changes were made each semester as experience was gained in the course, the preparation of materials was basically a one-time affair. However, the actual teaching of the course was more difficult for the instructor as the various students were working on different sections of the course. It was necessary to exercise caution so that the help given to the student was appropriate to his level of knowledge of logic at that particular time in the course.

The greatest advantage as well as the greatest disadvantage for the student was the privilege to work at his own pace; he could complete the course any time during the semester. To my surprise, very few completed the course before the end of the semester. The fact that a student could work at his own pace actually turned out to be a great disadvantage. When a student was rushed with work in his other courses, he tended to let logic slide. Written warnings to students when they appeared to be falling too far behind (self-posted grades on the bulletin board) on the folly of trying to learn logic in a brief period of time usually went unheeded. Material in other courses which had a definite deadline took precedence over logic which did not need to be finished until the end of the semester.

It was an interesting experiment but the degree of success is difficult to judge. I suggest to anyone considering similar methods that something be done to insure that students maintain a pace that will permit satisfactory completion of the course. This may not appear consistent with the notion of "self-paced" study, but it actually is. If the course is divided into units, each perhaps covering what we might typically cover in two weeks, and each with its own deadline, the stu-

dent may still set the pace for study in each unit. If the student should fail to prepare adequately for a unit quiz, this failure will not jeopardize the whole course, but it should help the student realize that the pace the student sets must be a realistic one, i.e., it must take account of the student's abilities and goals.

1. Textbooks used were Stephen F. Barker, *The Elements of Logic* (New York: McGraw-Hill Book Co., 1965) and Arnold B. Levison, *Study Guide for Barker's Elements of Logic* (New York: McGraw-Hill Book Co., 1965). The course covered the complete text except Chapter 4, "Quantification."

2. A workbook was not used in the course previous to this experiment. Its discussion of principles (which would have been done in class) was useful as well as the practice exercises.

3. The grade distribution summary for the experimental course was A:22(24%), B:23(25%), C:22(24%), D:13(14%), and F:11(12%). It should be noted that most of the failures involved students who gave up their efforts to finish the course when they fell too far behind the suggested pace. For the one semester the Barker text was used, the grade distribution was A:2(12%), B:4(24%), C:6(35%), D:4(24%), and F:1(6%).

4. Percentage based on the number who answered the particular item.