

THE INSTRUCTIONAL DEVELOPMENT/PLATO EFFORT IN FLORIDA

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INTRODUCTION

The purpose of this paper is to provide background concerning the Instructional Development/PLATO effort at the Florida State University. PLATO is a sophisticated, tutorial computer-assisted-instruction system developed at the University of Illinois over the last 15 years. PLATO IV, the present culmination of this 15-year effort, was designed from the terminal end back and is based on a plasma display screen. The University of Illinois' development has led to a very effective, tutorial, computer-assisted-instruction system.

The Florida State University is the first university beyond Illinois to have its own complete PLATO system. A number of other universities and schools around the country and world have terminals connected to the University of Illinois' PLATO system, but not one of those universities and schools has its own PLATO system. The University of Illinois presently serves users from as far east as Europe and as far west as the west coast of the United States. There is a continually growing interest in PLATO around the world.

Florida State University's uses of the PLATO system represent another step in the uses of tutorial computer-assisted-instruction.

1. The Florida State University plans to implement the PLATO system as a production system with an emphasis on stability and reliability. There will be few changes in the basic structure or in the programming language, TUTOR, on the Florida State University system. The development of new commands and new structures remain the responsibility of the University of Illinois and the Control Data Corporation.
2. The Florida State University plans to use PLATO in a total instructional design effort. The emphasis of such an effort is on using that instructional medium well in an environment in which other media (lecture, demonstration, laboratory, group discussion, slides, slide/tapes, video, and so forth) are present.
3. Over the next five to ten years, the Florida State University plans to redesign a large number of full courses at the elementary, secondary, community college, and university levels using the PLATO tutorial CAI system and other media where appropriate.

This paper reviews the history of instructional development and of PLATO at the Florida State University and within the State of Florida. The paper will also discuss the timeline for this development effort, the use of PLATO as a State utility, and the funding sources as they appear at this time.

HISTORY OF INSTRUCTIONAL DEVELOPMENT AT THE FLORIDA STATE UNIVERSITY

The Florida State University has been involved in systematic instructional development of university-level courses for some time. The College of Education has a strong emphasis on both the theory and the practice of systematic design procedures; the College of Education has also maintained an effort in the uses of computers in instruction through its Computer Applications Laboratory.

In 1963, the Florida State University instituted its Council for Instruction. The Council for Instruction is given University resources to help faculty do new things in their instruction. The faculty propose projects to the Council for Instruction on a competitive basis. Some twenty to thirty projects have been funded each year in two programs, a Summer Awards Program and an Academic Year Awards Program. Two to three times as many proposals are made as Awards given. The Council for Instruction system is highly competitive, and an award is highly prized by the faculty. The Center for Educational Design oversees and contributes instructional design expertise to these projects. Projects have led to multi-media approaches in many disciplines. As a measure of the success of this Council for Instruction effort, seventy percent of the proposals for summer 1975 came from main-line Arts and Science departments in the University.

To give another idea of how far Florida State University has come with instructional design procedures: The audio-visual materials designed are used in courses which enroll more than 22,000 students each year. The computer-managed-instruction system that the Center for Educational Design has developed is used by more than 7,000 students each year. This computer-managed instruction system is designed to be very versatile and is heavily used, particularly in individually-paced instruction. There are several learning resource centers on campus, the largest of which is in the main library. The Library's Listening/Viewing Area houses computer terminals, PLATO terminals, video tape equipment, slide/tape equipment, audio tape equipment and so forth. About 6,500 students each month use materials in this Listening/Viewing Area of the main library.

Another way to measure the use of instructional design procedures and processes at the Florida State University is to consider the Curriculum of Attainments coordinated by the Center for Educational Design. A Curriculum of Attainments Project in a department designs two full years of material in that department, either the upper two years for the major, or the two

years for a Master's degree. The material is competency-based and time-variable. Students are assigned a faculty mentor, who guides the students' learning. The learning materials are entirely packaged. A student's progress is credited by a faculty jury, which includes an outside practicing professional in the field and normally does not include the faculty mentor for the student. Clearly, such an educational system is non-traditional in university structures, particularly at large public universities like the Florida State University. However, three departments already have major programs on a Curriculum of Attainments basis now, and five more are in the process of designing materials to start students in Curriculum of Attainments programs in 1975. The Curriculum of Attainments is a large step toward individualizing education at the university level.

Thus, the Florida State University has a long and effective history in systematically designed materials. The use of design procedures, and the use of the Center for Educational Design for consultant purposes, is accepted by nearly all departments on campus. Departments are now beginning to credit such development work for instruction as being equivalent to research efforts at the faculty level.

HISTORY OF PLATO IN FLORIDA

In 1972, a number of people at the Florida State University became interested in choosing a tutorial-dialogue system to complete the set of media available for faculty in their instructional design work. A decision was made to try first an incremental system, whereby Florida State University and other Florida universities would obtain a few terminals and connect them to the University of Illinois. The purpose was to try PLATO in instruction on a relatively modest scale. A number of departments at Florida State and other universities were interested and committed themselves to designing materials. If the interest then grew, Florida State University, being the only State University with a Control Data computer, might install a PLATO system. A proposal was written on this incremental basis, and the interest expressed was very high. However, the proposal was not funded because the agency did not have sufficient funds. At that point, the PLATO development effort seemed to be on hold for some period of time.

The Control Data Corporation, which manufactures the central hardware of the PLATO system, then offered to install a PLATO system at the Florida State University for minimal cost. Control Data Corporation had become interested in the Florida State University for educational reasons in addition to reasons based upon good relationship with the Computing Center at Florida State. Although there had been demonstrations of PLATO at the Florida State University in connection with the original incremental-approach proposal, it was decided to do more demonstrations for larger numbers of people before the Florida State University committed itself to installing a full PLATO system.

Several types of demonstrations took place. First, Florida State University personnel took several groups of people to the University of Illinois. The groups included the Commissioner of Education for the State of Florida, members of his staff, members of the Board of Regents' staff for the University system, a number of Florida State University administrators, and faculty from several universities. After a positive response from those demonstrations, Florida State University brought a terminal to FSU for a month. During that month, demonstrations were given for more than 300 people, including faculty, staff, students, and administrators from a number of universities and schools in the State of Florida. There were several national and international educators on campus during that period who also were interested in seeing a demonstration. All these people were asked for feedback; the feedback that was obtained was positive. More than 20 Florida State University departments (out of about 100 departments in all) were involved.

The contract negotiations concerning buying a PLATO system were carried on entirely by the Florida State Computer Center and the Division of Graduate Studies and Research, not by the Center for Educational Design. The negotiations arrived at an acceptable contract, which the Florida State University, with the agreement of the Florida Board of Regents and the Florida Board of Education, entered into in 1974. The contract involved buying the central hardware for a complete PLATO system. Florida State University's PLATO system came up in mid-January of 1975 and is now operating stably from 9:00 A.M. to 10:00 P.M. all week. As soon as possible, the PLATO system will be made available 24 hours a day. Several courses are already using the PLATO system, and a number of others are designing materials to be put on PLATO. There are currently only 12 terminals at the Florida State University; four more will be added from the University of Florida during the summer of 1975. Two of the terminals will be used in a local elementary school, and a number of other educational institutions have expressed considerable interest in connecting to the Florida PLATO system. So, PLATO has arrived at the Florida State University and will be used around the State at various educational levels.

THE FLORIDA COURSE DESIGN/PLATO EFFORT

Once it became clear that PLATO would be coming to the Florida State University, it fell to the Center for Educational Design to plan how to use that medium effectively. The planning for the development of PLATO courseware was done in a substantially different financial era than that in which we now find ourselves. It is clear that Florida's austerity program will modify plans for the future. Since the full impact of the austerity program upon the PLATO progress is not yet understood, this paper will present the plans as they were originally formed. The major effect of austerity on the planning will be to lengthen the timeline, that is, to design fewer full courses by 1980.

Figure 1 shows a timeline for the Florida State PLATO effort. Three of the lines show the projected development projects. To understand the timeline, one must also see the development timeline for an individual project. Figure 2 shows the phases of any individual project to design a full course

systematically. For simplicity, the feedback lines on this phasing diagram are omitted. In operation, the phases shown in Figure 2 are often not truly serial; some activities involved in one phase may be going on concurrently with those involved in another phase. Table 1 shows the activities associated with an individual project's progress through its phases. As can be seen, the progress of a project is that of a standard instructional development process. An instructional development team, including content faculty and instructional design personnel, systematically determine the specific content, get agreement on that content, design learning units flexibly (to be used as individualized instruction or in more traditional ways), design assessment activities, evaluate processes and products, pilot and field test materials, and revise. All the activities of these projects are overseen by the Center for Educational Design.

One can see that Florida State's PLATO effort is actually an instructional design effort using PLATO where it fits and using other media where they are appropriate.

DEVELOPMENT TIMELINE

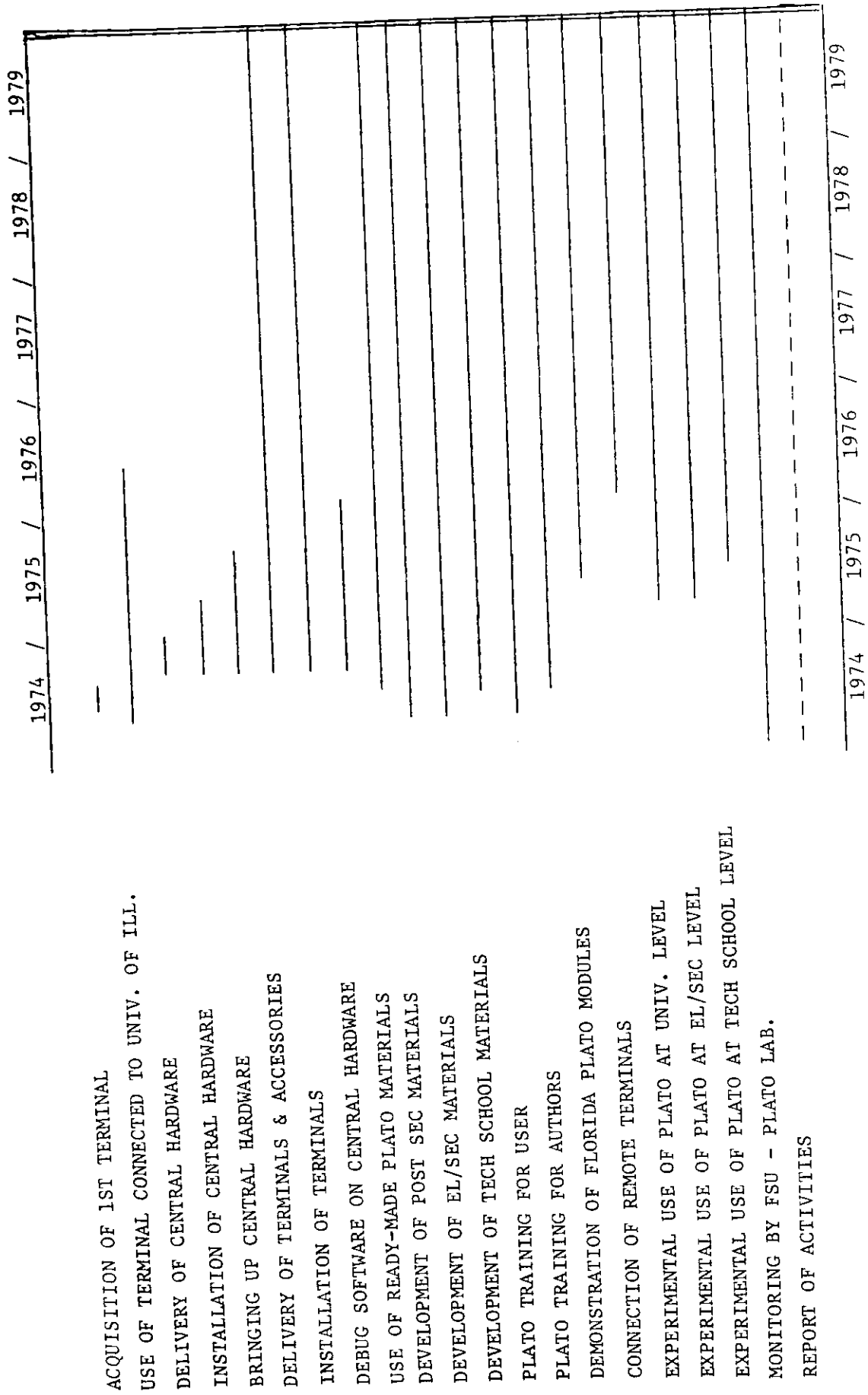


Figure 1

A single-course development project goes through the following phases:

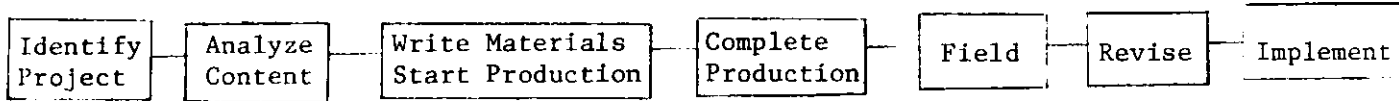


Figure 2

<u>Phase</u>	<u>Time Necessary</u>	<u>Activities</u>
1. Identify Courseware Project	(for 3 quarter hour course) Variable	Identify potential candidates Obtain proposal Select among proposed projects Identify course constraints Identify learner needs
2. Analyze Content	1 Quarter	Write general objectives, specific objectives Obtain agreement on objectives Design instructional system Design assessment system Cluster objectives into packages Choose media for packages Select assessment instruments Determine evaluation strategies Find available materials
3. Prepare Materials & Start Production	1 Quarter	Select references Select among available materials Write extra print materials Write scripts Write tests Write evaluation instruments Begin production for some packages Begin 1st piloting
4. Complete Production	1 Quarter	Complete package production Package summaries Print materials Media materials Pre- and post-tests Complete 1st piloting Complete evaluation instruments
5. Field Test	1 Quarter	Use all materials in class of 30 Evaluate success of packages and materials Determine revisions necessary
6. Revise Materials	Up to 1 Quarter	Revise and reproduce any materials found wanting
7. Implementation	-----	Implement the materials for all students

Table 1

FUNDING SOURCES

All of the Florida State University PLATO effort so far has been funded by State monies. Florida State University is paying for central hardware acquisition; the costs are essentially the same as the costs before PLATO was involved. The Center for Educational Design obtained a Florida Department of Education contract during summer, 1974, to design the procedures and processes for the Instructional Development effort. The Florida State University is buying some terminals; other agencies using the system buy their own terminals and pay both communications costs and a port fee for the use of the system.

The Center for Educational Design is presently pursuing some outside funding. In particular, we are interested in studying how transferable the materials presently available at the University of Illinois are when used in courses in Florida and adapted to the Florida State PLATO computer system.

Individual projects for the design of courses are funded partly by the Center for Educational Design and partly by the department or agency involved. For a University department, typically the content faculty time involved (for the content faculty member of the instructional design team and for the review panel of faculty), comes from departmental resources; the rest of the support (instructional design faculty and graduate assistants, programming assistance, producers, secretaries, etc.) come from the resources of the Center for Educational Design. So, as is usual, the funding is a mixed bag. It should be noted that the Center for Educational Design has not received any extra university funding to maintain the Instructional Development/PLATO effort. The resources dedicated to this course design effort come from a reallocation of present resources.

CONCLUSION

Finally, then, the Florida State University is involved in a sizable effort to use PLATO as an effective medium in systematically designed courses. The Florida State course design project is a project that designers and faculty from all universities should watch carefully. The effort represents a sizable commitment to upgrading the instruction at a university (as well as at other educational institutions) in carefully thought-out ways. The products of the Florida State effort, systematically designed courseware, may also prove useful for export to other educational institutions in the country.