An Analysis of University Training Programs for Instructional Developers

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Abstract
This article summarizes a study of the curricula of nine graduate programs in instructional development in three categories: Residential PhD, Commuter PhD, and MA Only. It briefly describes the methodology used. It then presents general comparisons among the institutional categories on nine variables: purpose/orientation; curriculum development processes; number and types of ID courses; where/how ID is learned; types of synthesizing projects; emphasis on faculty/organization development and performance solutions; orientation to evaluation; orientation to ID; and number of students, number of faculty, and student/faculty ratio. It presents the data on the amount of time individual programs and categories of institutions spend in their curricula on 82 ID related competencies in five Domain of Instructional Technology functions and 15 competency areas. The author then compares institutional categories on the general variables and the specific competencies, and individual institutions on the specific competencies, pointing out interesting and unexpected results. Finally, the author draws several conclusions about the emphases of the institutional categories and individual programs, and raises questions about issues related to ID training that seem to require more research.

Each year, hundreds of students leave graduate programs in instructional development with Master’s and Doctoral degrees to seek employment practicing, researching, and teaching ID in the real world. And each year, hundreds of students enter these same graduate programs to gain the competencies they need to become proficient in some aspect of ID.

While the ID field is beginning to come to some agreement about the core set of competencies needed by an instructional developer (Task Force on ID Certification, 1981), virtually no analysis has been done of how students gain those competencies in their graduate programs. Patridge and Tennyson’s (1978-1979) analysis of 9 graduate programs included only demographic data about those programs, and rankings of very general competency areas which current programs contained, or which should be contained in an ideal program. Moore’s (1981) study yielded only a rank-ordering of institutions considered most prestigious by respondents.

There has been, to date, no in-depth analysis of the curricula of graduate ID programs to determine exactly what competencies students gain while in those programs.

Objectives of this Study
The present study was undertaken to provide this in-depth analysis of nine graduate ID programs which were divided (as explained below) into three categories. The objectives of the study were:

(1) to compare nine ID graduate programs, in three categories, on general characteristics: purpose of the program; emphases of the programs; processes used for developing the curriculum; number of students and faculty; number and types of ID courses; orientation to ID, evaluation, and performance analysis; types of synthesizing projects; and where ID is learned;

(2) to compare nine ID graduate programs, in three categories, on the specific curriculum offered to students, using a competency-based comparison;

(3) to describe overall strengths and weaknesses of graduate ID training in general.1

Institutions/Categories Studied
When one thinks of ID graduate programs to study, one immediately thinks of the "name" PhD institutions, such as those studied by the authors described above. This investigator, however, felt that there were two other categories of institutions that this approach omitted, and they were added to this study. The three categories of institutions included in this study were:

1 Residential PhD—oriented to younger, full-time students, more theoretical; not specifically job oriented (some academic, some business emphasis)

2 Commuter PhD—oriented to older, working students in urban areas; more practical; oriented to practitioners in business and industry

3 Master’s (MA) Only—offer the MA degree only; oriented to older, working students in urban areas; more practical; oriented to practitioners in business and industry

The investigator identified many institutions in each of these categories, wrote to their department chairs about the study, received expressions of interest from some, and then made the final selection of institutions to study based on the following criteria: category; willingness to participate; national reputation; geographic diversity; philosophical diversity; diversity in type of student served; and logistical factors, such as time, resources, and scheduling.

The institutions selected for study in each category are listed below. It is important to note that inclusion or exclusion of an institution in the study is not an indication of, and was not influenced by, the investigator’s opinion about the quality of the institution’s ID program.

Residential PhD—Florida State University, Indiana University, Syracuse University
Commuter PhD—University of Pittsburgh, University of Southern California, MA Only—Governors State University, Rochester Institute of Technology, San Diego State University, San Francisco State University
Methodology

Three phases of the methodology used in the study will be described briefly here: instrument design; site visits; data analysis.3

Instrument Design. The author began with the competencies specified by the Task Force on ID Certification (1981). Since these only represented a proposed “core,” he added competencies related to ID following the functions of the Domain of Instructional Technology (AECT, 1977). This draft list was circulated to the faculty at FSU and several other participating institutions for review. Deletions and additions were made based on this feedback—using the guiding principle of being inclusive, rather than exclusive, to allow for institutional diversity. A total of 82 competencies representing all 9 DIT functions were finally selected for inclusion on the “Competency Comparison Checklist.”4

A “General Comparisons” instrument was also developed, which contained 10 items related to program purposes, orientation, processes for curriculum development, number and types of ID courses, where students learn ID, types of synthesizing projects, attention to faculty/organization development and performance analysis; orientation to ID and to evaluation, and student/faculty ratio.5

Site Visits. Rather than rely on college catalog information for the study, the investigator chose to visit each ID program to gather the data in person, using interviews and course syllabi as primary data sources.

During the 4 days spent at each institution (except for one, where only 2 days were spent) the investigator followed the same procedure:

1. Talk with chairperson to get overview of program, and find out which faculty it would be appropriate to talk to and which classes it would be appropriate to sit in on
2. Talk with faculty members who taught ID and ID-related courses
3. Read course syllabi for ID and ID-related courses
4. Sit in on ID classes
5. Talk with students about the program in general and the ID courses in particular
6. Fill out the “General Comparisons” and the “Competency Comparisons Checklist;”
7. Have a summary session with the chairperson, reviewing both instruments to ensure that all courses related to each competency were included, and that all information was accurate.

Data Analysis. The information on the “General Comparisons” instruments was in the form which allowed it simply to be summarized on a chart, which compared each program on each item.

The course syllabus information on the “Competency Comparison Checklist” was converted to a standard unit of comparison—“course weeks per competency.” This measure indicates the total number of weeks (3 hours of class meeting time—1 course week) that is spent addressing a competency throughout the whole degree program, regardless of in how many, or in which, courses.

For example, if a program spent 2 weeks on “task analysis” in “Introduction to ID,” an additional 4 weeks on it in “Advanced ID,” and an additional 3 weeks on it as part of “Seminar in ID,” the total number of course weeks for the competency “analyze job/task/goal” would be 7 course weeks.

Results—General Comparisons

The results of the General Comparisons among the three categories of institutions are shown in Table 1.

I. Purpose/Orientation—MA and PhD

The purposes and orientation of the instructional development programs of the institutions in the 3 categories showed that Commuter PhD and MA only institutions have significantly different goals and approaches from those of the Residential PhD programs. Therefore, it was indeed appropriate to have included them in the study, and to analyze the data from those institutions separately and to compare them to the Residential PhD programs.

The results seem to indicate that:

1. MA Only programs view the ID skills they provide at the MA level as sufficient for a developer to be competent on the job, while both groups of PhD programs view what they do at the MA

“...there has been, to date, no in-depth analysis of the curricula of graduate ID programs...”

Adjustments were made for optional courses which only some students took, for competencies which were gained in internships and master's projects, and for cases in which the syllabus did not specify how much time was to be spent on any of a number of different competencies or areas the course was supposed to cover.

The numbers of course weeks for individual competencies were then grouped by DIT function, and by sub-areas within some of the functions. This provided comparison data for the 9 individual programs.

Average number of course weeks for each DIT function and sub-area were then calculated for each of the 3 categories of institutions. This provided the comparison data for the 3 institutional groupings.

Finally, an overall average number of course weeks for each DIT function and sub-area were calculated. This allowed comparison of both institutional groupings and individual programs with the overall average.
Table 1
Summary Profile of the Three Types of Institutions Studied
Based on General Comparisons

<table>
<thead>
<tr>
<th>Item</th>
<th>Residential PhD</th>
<th>Commuter PhD</th>
<th>MA Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Purpose/Orientation MA Degree</td>
<td>Basic design competencies; preparation for PhD</td>
<td>Basic design competencies; job related</td>
<td>Practical design skills for careers in the private sector</td>
</tr>
<tr>
<td>Purpose/Orientation PhD Degree</td>
<td>Advanced design competencies; theory-based research, design, management, evaluation.</td>
<td>Advanced design competencies; ID with base in prod. and research applied in Bus/ind.</td>
<td>(believe MA level skills sufficient for jobs)</td>
</tr>
<tr>
<td>II. Curriculum Development</td>
<td>Faculty perceptions; grad input.</td>
<td>Input from grads, community; literature</td>
<td>Community advisory groups &amp; needs assessment</td>
</tr>
<tr>
<td>III. Number of Types of ID Courses</td>
<td>3.5-4 &quot;how to&quot; ID courses; Addit. 2.5 &quot;theory research, philosophy of ID&quot; courses</td>
<td>3.5-4 &quot;how to courses; no addit. &quot;theory, research, philosophy of ID&quot; courses</td>
<td>3.5 - 4 &quot;how to&quot; ID courses; No addit. &quot;theory, research, philosophy of ID&quot; courses</td>
</tr>
<tr>
<td>IV. Where/How ID learned</td>
<td>Internship</td>
<td>Courses plus jobs</td>
<td>Courses; honed in internships</td>
</tr>
<tr>
<td>V. Synthesizing Projects MA PhD</td>
<td>Comp. Exams/Thesis Theory-based development &amp; validation project; Database-based research</td>
<td>Developed &amp; validated IS Theory-based development &amp; validation project</td>
<td>Developed &amp; validated IS</td>
</tr>
<tr>
<td>VI. FD/OD/Performance Analysis</td>
<td>Virtually none; IU-minor; internship</td>
<td>Virtually none</td>
<td>Virtually none GSU—courses</td>
</tr>
<tr>
<td>VII. Orientation to Evaluation</td>
<td>Project</td>
<td>Product</td>
<td>Product</td>
</tr>
<tr>
<td>VII. Orientation to ID</td>
<td></td>
<td>Varies by individual institution: Some systematic/scientific; Some systemic/holistic; Some one model; Some synthesis of models; Some prescribe model; Some have students synthesize models</td>
<td>Varies by individual institution: Some systematic/scientific; Some systemic/holistic; Some one model; Some synthesis of models; Some prescribe model; Some have students synthesize models</td>
</tr>
<tr>
<td>IX. # Students</td>
<td>Larger No. of students</td>
<td>Larger No. of students</td>
<td>Smaller number</td>
</tr>
<tr>
<td># Faculty</td>
<td>Larger prop. of MA</td>
<td>Larger prop. of PhD</td>
<td>Smallest</td>
</tr>
<tr>
<td>Student/Faculty Ratio</td>
<td>Largest</td>
<td>Middle</td>
<td>Largest-24/1</td>
</tr>
<tr>
<td></td>
<td>Smallest—58% of other two: 14.5/1</td>
<td>Equals MA Only</td>
<td>Equals Commuter PhD</td>
</tr>
</tbody>
</table>

terms of “skills needed for jobs in business and industry,” while the Residential group defines them in terms of more academic “theory and research” skills.

II. Curriculum Development Processes

Each group of institutions derived its curriculum using processes congruent with the differences of purpose/orientation described above.

1. The MA Only programs, which were most concerned with providing skills for jobs in the private sector, made extensive use of formal needs assessments and formal, ongoing, business and industry advisory groups.

2. The residential PhD programs, which were most concerned with theory and research skills, made most extensive use of the subject matter experts in those areas—their own faculty. One went even further and had an instructional developer from the campus service work with the ID faculty as SME.

3. The Commuter PhD programs, whose orientation was a mix of these, used an approach which was also a mix, combining student/faculty development teams with community input.

4. The emphasis placed on faculty perceptions concerning curriculum, as opposed to student and community perceptions, was much less in the MA Only group than it was in the two PhD groups.

5. The emphasis placed on the professional literature related to ID com-
petencies and training was much less in the Residential PhD group than in the other 2 groups.

III. Number/Types of ID Courses

"How to do ID" skills courses were offered at all institutions; some offered, in addition, courses related to the theory, philosophy, model building, and research on ID. The numbers in Table 1 show some expected, and some unexpected, results:

1) All three groups offer the same number of "how to" ID courses. Though PhD students take an additional 60 credits, they learn no more of the "how to do's" than MA students.

2) Only Residential PhD programs offer additional courses beyond the 3.5 - 4.0 "how to's," and these fall in the theory/research category—which is missing from the more practically oriented MA Only and Commuter PhD programs.

3) While not evident from Table 1 alone, the number of reported "ID Courses" does not match the number of course weeks devoted to ID competencies to be reported in the Specific Competency Comparisons later in this article. Those numbers seem to indicate approximately 1 less course in each category for all 3 groups. This discrepancy indicates the danger of analyzing curricula using merely course titles and descriptions—it includes courses with ID titles that do not really address ID competencies, and excludes courses without ID titles that really do address ID competencies.

IV. Where/How ID is Learned.

One would expect, given the purposes of the programs studied and the number of "how to" ID courses they offer, that those courses would be where students learn how to do instructional development. Interviews with both faculty and students indicate, however, that this is not the case—as shown in Table 1.

1) The MA Only programs were the only group in which both students and faculty clearly indicated a primary emphasis on learning the ID skills in the courses students took, though they believed these skills should be further honed in real-world internships.

2) The Residential PhD programs placed almost exclusive emphasis on internships—which, they admitted, not all students could get—as the place to learn the ID skills; "the courses were not for that purpose," they said.

3) The Commuter PhD programs again were the bridge, relying equally on the courses and the students' real-world jobs, where skills were applied, for learning.

V. Synthesizing Projects

The type of culminating experience a program expects from a student (exam, project, thesis, dissertation) can be seen as one way of operationalizing the purpose/orientation of that program. As the data in Table 1 shows, this is the case for the ID programs studied:

1) At the MA level, the more practically oriented Commuter PhD and MA Only programs accepted fully developed and validated instructional systems as synthesizing projects, while the theoretically oriented Residential PhD programs preferred exams or theses.

2) At the doctoral level, both Commuter and Residential PhD programs would accept theory based development and validation projects, but some of the Residential programs preferred, and in one case demanded, a data-based research study.

VII. Orientation to Evaluation

The evaluation of the instructional systems they develop is often the responsibility of instructional developers—whether as part of their development responsibility or as part of a full-time evaluation/quality assurance assignment in their organizations. Sometimes, instructional developers move into evaluation completely and work at the program evaluation level (La Stufflebeam, Stake, Scriven, Guba). As summarized in Table 1, the groups of programs studied showed the following differences in their emphasis on evaluation:

1) The Residential PhD programs emphasized program evaluation, which is consistent with the research orientation of those programs, and with the desire of many of the faculty and students at those institutions to see the students work as pure evaluators or as evaluators in an ID context.

2) The Commuter PhD and Master

"The curricula of nine institutions were studied in three categories: Residential PhD, Commuter PhD, and MA Only."

VI. Faculty Development/
Organizational Development/
Performance Analysis

In their jobs, most instructional developers will not only develop instructional systems, but will also have to apply techniques from three additional fields: faculty development; organizational development; and performance analysis. These three areas are widely discussed in the ID literature. According to some authorities, all three are related to, but not part of, ID. According to others, all three (especially performance analysis) are an integral part of ID. Yet the results of this study (Table 1) indicate that:

1) There is virtually no preparation in any of these three areas in any of the groups of institutions studied.

2) Only 1 institution (GSU) offers a course on solving performance problems using Gilbert's model.

3) Only 1 program (Indiana) is at all concerned with faculty development, and this occurs during an internship experience.

Only programs emphasized the formative and summative evaluation of instructional systems and products, which is consistent with their business and industry orientation, and the expectation that graduates would be doing only this type of evaluation on their jobs.

VIII. Orientation to Instructional Development

As the literature in the field clearly indicates, there is a great difference of opinion among instructional developers about the philosophy underlying ID (Performance and Instruction, September, 1981) and models of how to do ID (Journal of Instructional Development, Winter, 1980-81). These differences are reflected in the orientations to ID held by the nine programs studied, as summarized in Table 1:

1) Unlike the other variables studied, there were no differences by categories of institutions: rather, the orientations varied by individual institution.

2) Some institutions seemed to hold the view that ID was a "systematic/scientific/replicable" process (FSU,
Syracuse, GSU, San Diego, and San Francisco—with FSU being the strongest adherent to this position), while others held that it was a “systemic/holistic” process (Indiana, Pittsburgh, and RIT seemed to fall into this category—with Indiana being the strongest advocate).

(3) Some institutions seem to favor one ID model as the best, while other institutions present the students with many models and have the students synthesize their own models.

(4) Of those institutions that favor one model, some use a model based on one particular theory or author, while others use a model which represents a synthesis (by the faculty) of several elements of many different models.

IX. Students/Faculty/ Student-Faculty Ratio

The numbers game is important in today’s shrinking higher education population, so the investigator decided to compare numbers of students, number of faculty, and student/faculty ratio for the variables. On some variables, however, there was no such congruity, or even pattern among categories of institutions. Conclusions and implications of these results will be discussed later.

Analysis Based on General Comparisons

Based on the 9 general comparisons made among the 3 categories of institutions, the authors drew the following analysis about similarities and differences among the 3 types of programs. Those marked with an asterisk will be discussed in the Conclusions section.

(1.3) The institutions within each of the three categories seem homogeneous in their overall program purposes/orientations.

(1.2) The overall program purposes/orientations are different for each of the 3 categories of institutions.

(1.3) Commuter PhD and MA Only programs are more job-related and more oriented toward business and industry; though students from Residential PhD programs actually offering more time on ID competencies than do the Commuter PhD programs.

(2.1) The process used by each category of programs is congruent with its purpose/orientation. Each selects the methods which provide the information to develop a curriculum which meets its purposes.

(2.2) No group used all the possible methods of gaining information for curriculum development, though MA Only programs tended to use more sources. The source least frequently used, except by MA Only programs, was community input through some formal mechanism.

(3) All 3 categories of institutions offer the same number of “how to” ID courses. This goes against “conventional wisdom” which would lead one to believe that a student would learn more “ID skills” if s/he went for an additional 60 credits of course work.

(2.3) It is congruent with their purpose/orientation that Residential PhD programs offer “research/theory of ID” courses, while MA Only programs do not. It is surprising to find, however, that Commuter PhD programs do not offer any more or more advanced ID courses than the MA Only programs, since this is not congruent with the purpose/orientation of the Commuter programs.

(4) It was interesting and surprising to discover that only the MA Only programs consider their courses as the primary place where one learns to do ID. It seems that if one wants to learn ID through formal, designed instruction, the MA Only institutions are the most appropriate places to go. On the other hand, if one wants to learn ID through informal, apprenticeship type experiences, then the Residential or Commuter PhD institutions are the most appropriate places.

(4.2) It is difficult to identify what is learned, and how it is learned, during an internship, and therefore it is difficult to say what ID skills people who learn ID through this approach actually learn. Further, it raises the question of where students who do not get internships learn to do ID.

(5.1) The types of synthesizing projects required by all three categories of institutions match their purposes/orientations as well as the practical nature of the ID field. The field seems to have moved away from accepting only the traditional experimental research dissertation as a synthesizing experience.

* (6.1) There is an almost total lack of
interest in, and time spent on, faculty development, organizational development, and the solving of performance (as opposed to instructional) problems, though those activities are, according to both the literature and actual practice, a significant part of the developer's problem-solving and solution implementation process. Perhaps academic programs lack input from the business community, which stresses this area.

*(7.1)* The orientation to evaluation of all three categories of programs is congruent with their purposes/orientations: Those in Commuter PhD and MA Only programs head for jobs in business and industry concentrate on product evaluation; those in Residential PhD programs headed for research and evaluation jobs concentrate on program evaluation.

*(8.1)* There is no clear cut analysis of the orientations of different institutions toward the instructional development process. Since this orientation can have direct practical effects on the variables on looks at and how one looks at them (as, for example, does qualitative vs. quantitative evaluation), more research is needed regarding the differences between the systematic and systemic, the one model and the multi-model, the synthesized and the unsynthesized orientations to ID.

*(9.1)* The larger number of students in the two PhD program categories makes sense because the programs contain both MA and PhD students.

*(9.2)* An interesting difference between the two PhD program categories is the proportion of MA to PhD student populations. The Residential category has equal numbers of MA and PhD students, while the Commuter category has a greater percentage of PhD students. One would expect this to lead to the offering of more advanced, and fewer basic, courses by the Commuter programs; yet the data indicate that exactly the opposite is the case.

*(9.3)* The favorable student/faculty ratio for Residential PhD programs is not surprising, and the high MA Only student/faculty ratio may be difficult for Residential PhD faculty used to such a low ratio to understand. The surprising, and probably not pleasant, high student/faculty ratio for Commuter PhD institutions certainly raises questions about stretching those faculty thin.

**Results—Specific Comparisons**

The number of course weeks spent on the 15 groupings of competencies analyzed in this study are shown in Table 2. This section will explain the competencies in each grouping, and address the intercategory similarities and differences, as well as specific institutional similarities and differences related to time spent on the competency areas.

**Design Competencies**—(1) Front-End Analysis. The area of identifying what the problem "really is," and selecting which problems to work on given limited resources is considered by many authors (Kaufman, Harless, Mager, Gilbert, Burton, and Merrill) to be the most important step in the ID process. Three competencies from this study were grouped into this area for analysis:

- select appropriate ID projects
- conduct needs assessment
- identify non-ID/performance problems

The results show that:

1. Overall, the nine institutions spend relatively little time on these competencies (average 4.3 weeks)
2. The MA Only institutions spend the most time (average 5.9 weeks), followed by the Residential PhD programs (4.2 weeks); the Commuter PhD programs spend the least amount of time (1.5 weeks)
3. The strongest individual programs on these competencies are GSU (with 11 required course weeks covering all 3 into this area:
- identify non-ID performance solutions
- develop job-aids
- develop algorithms.

The results show that:

1. So little time is spent on this area that category comparisons do not tell much.
2. Only 3 institutions (GSU, RIT, Syracuse) offer any coursework, with GSU and RIT spending about 10 course weeks on these competencies, and Syracuse about 5.

**Design Competencies**—(3) Learner Setting Analysis. That developers should know something about the learners for whom they are designing instruction, and that they should know the resources and constraints of the setting in which they are to develop and deliver the instruction, is common wisdom in the ID field. The competencies from this study grouped into this area were:

- analyze learner characteristics
- analyze setting characteristics

The results showed that:

1. There was almost no difference among either institutional categories or individual institutions on the number of course weeks spent on these competencies, with all very close to the average of 3.7 weeks.

"**Commuter PhD: Universities of Pittsburgh and Southern California.**"
<table>
<thead>
<tr>
<th>Competency Areas</th>
<th>Overall</th>
<th>Res. PhD</th>
<th>Com. PhD</th>
<th>MA Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Function (Total)</td>
<td>35.1</td>
<td>44.4</td>
<td>27.0</td>
<td>37.3</td>
</tr>
<tr>
<td>1. Front End Analysis</td>
<td>4.3</td>
<td>(4.2)</td>
<td>1.5</td>
<td>(5.9)</td>
</tr>
<tr>
<td>2. Performance Solutions</td>
<td>1.4</td>
<td>(0.9)</td>
<td>0.0</td>
<td>(2.4)</td>
</tr>
<tr>
<td>3. Learner/Setting Analysis</td>
<td>3.7</td>
<td>(4.1)</td>
<td>3.8</td>
<td>(3.2)</td>
</tr>
<tr>
<td>4. Job/Task/Content Analysis</td>
<td>7.3</td>
<td>(9.7)</td>
<td>4.5</td>
<td>(7.6)</td>
</tr>
<tr>
<td>5. Objectives/Tests</td>
<td>5.7</td>
<td>(6.3)</td>
<td>6.0</td>
<td>(5.0)</td>
</tr>
<tr>
<td>6. Organization/Sequencing</td>
<td>5.0</td>
<td>(7.0)</td>
<td>2.5</td>
<td>(4.8)</td>
</tr>
<tr>
<td>7. Strategies/Activities</td>
<td>8.7</td>
<td>(12.2)</td>
<td>(8.7)</td>
<td>(6.0)</td>
</tr>
<tr>
<td>Evaluation Function</td>
<td>13.2</td>
<td>20.5</td>
<td>7.2</td>
<td>9.1</td>
</tr>
<tr>
<td>Personnel Management Function</td>
<td>6.5</td>
<td>3.3</td>
<td>1.2</td>
<td>11.5</td>
</tr>
<tr>
<td>Organization Management Function (Total)</td>
<td>19.1</td>
<td>29.9</td>
<td>7.2</td>
<td>17.1</td>
</tr>
<tr>
<td>1. Project Management</td>
<td>11.9</td>
<td>(14.5)</td>
<td>(4.0)</td>
<td>13.9</td>
</tr>
<tr>
<td>2. Diffusion/Change</td>
<td>7.2</td>
<td>(15.0)</td>
<td>(3.2)</td>
<td>(3.2)</td>
</tr>
<tr>
<td>Research/Theory Function (Total)</td>
<td>64.4</td>
<td>93.8</td>
<td>62.9</td>
<td>43.3</td>
</tr>
<tr>
<td>1. Conduct/Cite Research</td>
<td>24.4</td>
<td>(35.3)</td>
<td>(27.0)</td>
<td>(15.0)</td>
</tr>
<tr>
<td>2. Educ. Technology Theory</td>
<td>10.2</td>
<td>(15.0)</td>
<td>(9.8)</td>
<td>(6.8)</td>
</tr>
<tr>
<td>3. ID Theory</td>
<td>9.8</td>
<td>(16.2)</td>
<td>(5.3)</td>
<td>(7.4)</td>
</tr>
<tr>
<td>4. Theories from Other Fields</td>
<td>20.0</td>
<td>(27.3)</td>
<td>(20.8)</td>
<td>(14.1)</td>
</tr>
<tr>
<td>Overall Totals</td>
<td>136.6</td>
<td>191.1</td>
<td>105.5</td>
<td>118.5</td>
</tr>
</tbody>
</table>

(3) There are non-category-related differences, with Indiana and RIT spending the greatest amount of time (15 weeks), FSU and GSU spending the next greatest (8 weeks), and the other 5 institutions spending much less time (average 4 weeks).

Design Competencies—(5) Objectives/Tests. Preparing objectives which state what the learner will be able to do after instruction (whether they use 1, 3, 4, or 5 parts), and writing criterion-referenced tests which measure those objectives have been part of the ID field since the early Programmed Instruction movement. The following competencies from this study were grouped into this area:

- write behavioral objectives
- write criterion referenced tests.

The results showed that:

(1) There was almost no difference among institutional categories, with all spending very close to the average of 5.7 course weeks.

(2) There was one individual institution that stood out, with FSU spending 12 course weeks at the MA and PhD levels on the “write criterion referenced tests” competency.

Design Competencies—(6) Organization/Sequencing of Instruction. One of the growing theoretical, research, and practical areas of ID is the application of principles of learning and instruction to the psychologically optimum sequence for teaching a series of objectives or a body of content (two examples are Gagne’s “types of capabilities” and “learning hierarchies” and Reigeluth’s “elaboration theory”). The competencies from this study grouped into this area for analysis were:

- classify behavioral objectives/learning outcomes
- sequence skills/objectives.

The results showed that:

(1) Overall, the nine institutions spend an average of 5 course weeks on this area.

(2) Residential PhD programs spend the greatest amount of time (average 7 weeks), with MA Only programs spending about the average time (4.8 weeks) and the Commuter PhD programs spending the least amount of time (2.5 weeks).

(3) There are non-category-related differences as well, with Syracuse spending the greatest amount of time by far (14 weeks), GSU spending the next greatest (8 weeks), RIT and FSU spending about the average (5.5 weeks), and the other 5 institutions spending the least amount of time (average 2.5 weeks).

Design Competencies—(7) Instructional Strategy/Activities. Theory and research indicate that instruction can be designed more effectively through the use of macro and micro level principles for designing instructional strategies and activities, (e.g., the work of Gagne and Briggs, Merrill and Tennyson, Reigeluth). The competencies in this study that were grouped into this area for analysis were:

- identify appropriate events of instruction and conditions of learning
- create specifications for instructional activities/events
- specify instructional strategy
- prepare specifications/prescriptions for materials.

The results show that:

(1) Overall, the nine institutions spend an average of 8.7 course weeks on this area.

(2) Residential PhD programs spend the greatest amount of time (average 12.2 weeks), with Commuter PhD programs spending the average time (8.7 weeks), and MA Only programs spending the least time (6 weeks).

(3) The great range of times within each category may make those averages less meaningful than individual institutional comparisons.

(4) The individual institutional differences show Syracuse spending the most time by far (22 weeks), with USC close second (16.5 weeks); FSU, GSU, and RIT come next, all grouping around 9 weeks, while the remaining four institutions all group around 3 weeks.

Evaluation Competencies. Evaluation,
growing from the developmental and validation testing of program instruction, has become a rhetorical—if not always practiced—part of the ID process, as well as a field in and of itself. Formative and summative evaluation of instructional systems and products are part of virtually all ID models. In addition, based on the work of Stake, Stufflebeam, Scriven and Guba, evaluation of complete projects and all types of programs has developed into a field in which many ID program graduates seek employment. The competencies in this study which were grouped into this area for analysis were:

- conduct formative evaluation
- conduct summative evaluation
- conduct project evaluation.

—Overall:

(1) The average time spent by the nine institutions on all three competencies taken together is 13.2 course weeks.

(2) Residential PhD programs spend the greatest amount of time by far (average 20.5 weeks), with MA Only programs spending the next greatest (9.1 weeks) and Commuter PhD programs spending the least (7.2 weeks).

(3) There is an extreme range in the amount of time spent on evaluation by individual institutions, from a low of about 4.5 weeks at Pittsburgh, GSU, San Francisco, and RIT to a high of about 25 weeks at FSU and Syracuse, and 17.5 plus a complete minor at Indiana; this represents one of the greatest variations among all the competencies.

"MA Only: Governors State, Rochester Institute of Technology, San Diego State and San Francisco State."

The results, for each competency separately and for the area overall, show the following:

—Formative Evaluation:

(1) Overall, the nine institutions spend an average of 4.4 weeks on this competency.

(2) Residential PhD programs spend the greatest amount of time (average 7 weeks), while Commuter PhD and MA Only programs spend less time (average 3 weeks).

—Summative Evaluation:

(1) Overall, the nine institutions spend an average of 2.8 course weeks on this competency.

(2) The Residential PhD and MA Only programs spend the greatest amount of time (average 3.2 weeks), with the Commuter PhD programs spending less (1.5 weeks).

—Project Evaluation:

(1) The median time spent by all nine institutions on this competency is 6 weeks, with the distribution being trimodal.

(2) The Residential PhD programs spend a far greater amount of time (at 10 weeks, not including available minors in the area) than do Commuter PhD and MA Only programs (3 weeks).

(3) Three of the programs (one Commuter PhD and 2 MA Only) spend no time on this competency.

(4) Much of the work in evaluation at 5 of the institutions is optional rather than required.

Personnel Management Competencies. Instructional developers have to interact and consult effectively with other individuals (both subject matter experts and media producers), work effectively in a group or team, and supervise others. Interpersonal skills have received a great deal of attention in the literature—including, but not limited to, a special issue of JID and 2 issues of Performance and Instruction. The thrust of the arguments in this literature is that ID is a "people" job as well as an "information" one, and that a developer must be effective with people to succeed on the job. The competencies in this study related to this area were:

- consult effectively with SMEs
- use appropriate group process skills
- communicate effectively with media producers
- supervise people successfully.

The results show that:

(1) Overall, the nine institutions spend relatively little time in this area, with an average of 6.5 course weeks.

(2) MA Only institutions spend by far the greatest amount of time (average 11.5 weeks), with Residential PhD programs spending the next greatest (3.3 weeks plus informal learning in internships) and Commuter PhD programs spending the least (1.2 weeks).

(3) There are great individual institutional differences in time spent, with GSU and RIT spending the most by far (17 weeks), San Diego, San Francisco, and Syracuse spending the next greatest (6 weeks), and the rest spending far less (1.2 to 2 weeks—with some informal leaning in internships).

Organization Management—(1) Project Management. While some of the skills involved in project management may be performed only by advanced level ID managers, proposing, managing, monitoring, costing, timing, budgeting, and reporting on ID projects are activities most developers will recognize as part of their jobs. These activities must be performed to enable the design and evaluation functions to be performed at all, to ensure they are done on time and at reasonable cost, and to enable them to be done again in the future. The competencies from this study that were grouped into the Project Management area for analysis were:

- manage an ID project
- monitor an ID project
- use time/cost management system (PERT/cost effectiveness)
- develop budget for an ID project
- develop manpower requirements for an ID project
- write proposal/reports for ID related projects
- develop plans for an ID organization
- develop budget for an ID organization
- develop manpower requirements for an ID organization.

The results showed that:

(1) Overall, the nine institutions spent an average of 11.9 course weeks on this area.

(2) The Residential PhD and MA Only programs spent about the same amount of time (about 14.1 weeks average), while the Commuter PhD programs spent significantly less time (4 weeks).

(3) There are non-category related differences, with Syracuse and San Francisco spending the greatest amount of time (average 26 weeks), FSU, GSU, Indiana, and RIT spending the next greatest (10.2 weeks), and Pittsburgh, San Diego, and USC spending the least (4.7 weeks).

(4) There is a great range in time spent, from a low of 2 weeks to a high of 30 weeks.

Organization Management—(2) Dif-
fusion/Change. Since most institutions are new to, and/or skeptical of, ID, the dissemination of information about ID and the application of adoption and change strategies to make the organization more receptive to ID are crucial to the establishment and maintenance of a viable ID program within an organization. The following competencies in this study were grouped in the Diffusion/hange area:

- apply diffusion and adoption principles
- apply ID organizational change heuristics
- develop plan to change the organization to implement ID.

The results show that:

(1) Overall, the nine institutions spent an average of 7.2 course weeks in this area.

(2) Residential PhD programs spent a much greater amount of time (average 15 weeks) than did the Commuter PhD and MA Only programs (3.2 weeks each).

(3) Two institutions, FSU and Indiana, offer extensive optional coursework in this area.

Research/Theory Competencies—(1) Conduct/Cite Research. Instructional development principles and practices are based on research, such as that summarized and synthesized by Gagne, Fleming and Levie, Allen, and Chronbach and Snow. It is important for developers to be able to conduct the research needed to substantiate existing, or create new, ID principles and practices. The competencies in this study summarized for analysis in the Conduct/Cite Research area:

- conduct research related to ID
- locate research related to ID
- cite research related to educational technology
- cite research related to educational media.

The results show that:

(1) Overall, the nine institutions spent an average of 10.2 course weeks on this area.

(2) Residential PhD programs spend above this average amount of time (15 weeks), Commuter PhD programs spend about the average (9.8 weeks), and MA Only programs spend less than the average (6.8 weeks).

(3) There are 3 individual institutional differences worth noting: with FSU spending one-half of its group average (7 weeks), and GSU and Pittsburgh spending much more than their group averages (12.5 weeks).

Research/Theory Competencies—(3) ID Theory. If a developer is to be more than a technician, s/he must be able to go beyond mechanically applying procedures, and be able to understand and apply theory to the ID problem at hand. The ID theories referred to in this area are those theories/models/values/issues developed for, and applied almost exclusively in, the systematic design of in-

“Some institutions regard ID as a systematic/replicable/scientific process, while others regard it as a holistic/systemic process.”

(4) Systems, (f) cybernetics, (g) developmental psychology, (h) learning psychology, and (i) media/symbol theory. For this area, this study looked at the competency “apply theory X to ID” for each of the 9 fields listed as (a) through (i) above.

The results showed that:

(1) Few institutions exposed all students to all the possible fields from which theories and principles could be derived and applied to ID.

(2) Overall, the nine institutions spend an average of 20 weeks on this area.

(3) The Residential PhD programs...
spend above this average time (27.3 weeks plus the possibility of minors in some areas), the Commuter PhD programs spend on average (20.8 weeks), and MA Only programs spend less than the average (14.1 weeks).

(4) Two of the MA Only institutions, GSU and San Francisco, were closer to the overall average than to their group average, with about 18 weeks.

Production Competencies. This study originally intended to make the same kind of comparison as has been done above for production competencies, including all types of media and, especially, programmed instruction and CAI. An analysis of the raw data indicated that this would be neither possible nor helpful for the following reasons—which can also be considered conclusions about how production is included in ID curricula across the board:

(1) All nine institutions offered 30 course weeks worth of work in writing programmed instruction and CAI—but this was all optional coursework.

(2) A great deal of media production coursework was available at all institutions.

(3) Each institution seemed to favor learning production in a specific medium, but there was no pattern by category or rationale for this selection.

(4) An "optional" rather than "required" approach to students' learning media production (similar to learning PI/CAI) is followed.

Comparisons to the Average

In an attempt to further synthesize the results presented in Table 2, and discussed above, the author devised a norm-referenced measure—the comparison to the average. This measure involved taking the overall average number of course weeks for each of the 15 competency areas and comparing it with (a) the average number of course weeks for each of the three categories of institutions for each of the 15 areas, and (b) the number of course weeks for each of the nine institutions studied for each of the 15 areas.

The results of these comparisons, summarized in Table 3, show, for each category of institutions and for each individual program, the number of competency areas—both by DIT function and by total—on which it is above the overall average, at the overall average, and below the overall average.

These results show that, in descending order of time spent:

(1) The three categories of institutions have very different profiles, with:

<table>
<thead>
<tr>
<th>Category</th>
<th>MA Only</th>
<th>Comm. PhD</th>
<th>Res. PhD</th>
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<tbody>
<tr>
<td>Average</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Below</td>
<td>7</td>
<td>9</td>
<td>1</td>
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</tbody>
</table>

(2) The nine programs can be divided into three groupings based on time spent on all 15 competency areas:

<table>
<thead>
<tr>
<th>Group 1</th>
<th>above</th>
<th>average</th>
<th>below</th>
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</thead>
<tbody>
<tr>
<td>FSU</td>
<td>6</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Indiana</td>
<td>7</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Syracuse</td>
<td>8</td>
<td>4</td>
<td>3</td>
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<tr>
<th>Group 2</th>
<th>above</th>
<th>average</th>
<th>below</th>
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<tbody>
<tr>
<td>GSU</td>
<td>4</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>RIT</td>
<td>6</td>
<td>6</td>
<td>5</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 3</th>
<th>above</th>
<th>average</th>
<th>below</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pittsburgh</td>
<td>0</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>San Diego</td>
<td>1</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>San Fran.</td>
<td>1</td>
<td>5</td>
<td>9</td>
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<tr>
<td>USC</td>
<td>2</td>
<td>4</td>
<td>9</td>
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</tbody>
</table>

(3) The nine programs can be divided into four groupings based on time spent on only the 7 Design function competency areas:

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<thead>
<tr>
<th>Group 1</th>
<th>above</th>
<th>average</th>
<th>below</th>
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<tbody>
<tr>
<td>GSU</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>RIT</td>
<td>3</td>
<td>4</td>
<td>0</td>
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<tr>
<th>Group 2</th>
<th>above</th>
<th>average</th>
<th>below</th>
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</thead>
<tbody>
<tr>
<td>FSU</td>
<td>1</td>
<td>5</td>
<td>1</td>
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<tr>
<th>Group 3</th>
<th>above</th>
<th>average</th>
<th>below</th>
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</thead>
<tbody>
<tr>
<td>Indiana</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Syracuse</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>USC</td>
<td>1</td>
<td>2</td>
<td>4</td>
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<table>
<thead>
<tr>
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<th>below</th>
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<tbody>
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<td>2</td>
<td>5</td>
</tr>
<tr>
<td>San Diego</td>
<td>0</td>
<td>2</td>
<td>5</td>
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<td>San Fran.</td>
<td>0</td>
<td>2</td>
<td>5</td>
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Summary. This section has compared the institutions studied on the amount of time, measured in course weeks, spent on 15 groupings of competencies related to instructional development. It has given overall and institutional category average times, and, when indicated, times for individual institutions when they were significantly different from category times. It has also compared each category and institution to the overall average. Conclusions about some of the meanings of this data will be presented later in the article.

Analysis Based on Specific Comparisons

Based on the number of course weeks data presented in Table 2, and the comparison to the average data presented in Table 3, and the discussion of these results, the author drew the following analysis of how institutional categories and individual programs compare on the amount of time they spend in their curricula on the 15 competency areas studied. Those marked with an asterisk will be discussed in the conclusions section.

(1.1) Residential PhD programs spend the largest total amount of time on all 15 competency areas (191 weeks, or 12.7 courses, or 38 credit hours). This amount is much larger than either of the other two institutional groups. It is also larger than the average overall time spent by all categories (136.7 weeks, or 9.1 courses, or 27.3 credit hours). This is not surprising, since it is congruent with the purpose/orientation of the Residential PhD programs, and with the fact that PhD programs have 60 credit hours more than do MA Only programs.

(1.2) Residential PhD programs spend above average amounts of time on 10 out of 15 competency areas. This is far more "above average" than either of the other two categories has. Again, this is congruent with their purpose/orientation and amount of time available.

*(2.1) MA Only programs spend a larger total amount of time on these competency areas (118.5 weeks, or 7.9 courses, or 24 credit hours) than do the Commuter PhD programs (110.5 weeks, 7 courses, 21 credit hours). This difference is very surprising to the author. Since the Commuter PhD programs have "advanced ID skills" as part of their purpose/orientation, and 60 more credits in their total program, one would expect them to have more courses on ID, rather than less. The number of credit hours for the MA Only programs (24) is about all that is available to them for the competencies—since when added to 2 optional production courses and a project/thesis, it fills up the required 30-34 credit hours for an MA. While the Commuter PhD programs have 60 more credits in their programs, it is not clear from this study what these are used for in terms of ID skills.

*(2.2) The MA Only programs have more above average, and fewer below average, amounts of time on the 15 competency areas than do the Commuter PhD programs. This is surprising also, for the same reasons given above in 2.1.

*(3.1) On the 7 Design function competency areas, MA Only programs spend only slightly less time (37.3 weeks, 2.5
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<th>Above Average</th>
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**Key:**
- **D** = Design Competencies
- **E** = Evaluation Competencies
- **PM** = Personnel Management Competencies
- **OM** = Organization Management Competencies
- **RT** = Research Theory Competencies
- **TOT** = Total

Courses) than do Residential PhD programs (44.4 weeks, 3 courses) while Commuter PhD programs spend considerably less (27 weeks, or 1.8 courses). This is surprising for two reasons. First, one would expect the Residential PhD programs to spend more time than the MA Only programs due to their purpose/orientation ("advanced ID skills") and the extra 60 hours in their programs. Second, one would expect the Commuter PhD programs to be equal to the Residential PhD programs, and greater than the MA programs, for the same reasons discussed in 2.1 above: purpose/orientation and number of credit hours available.

*(4.1) Given their near equality of time spent on the Design function competencies, the major part of the total time difference between Residential PhD and MA only programs is in the 4 Research/Theory competency areas. These Research/Theory competencies account for 50 weeks of the total 70 week difference between the 2 categories. This difference is to be expected, given the research/theory orientation of Residential PhD programs and the practical orientation of the MA Only programs.

*(4.2) Commuter PhD institutions fall in between the other two categories (20 weeks more than MA Only and 30 weeks less than Residential PhD) on Research/theory competencies. This finding is congruent with their purpose/orientation which is more theoretical than MA Only programs and more practical than Residential PhD programs.

*(5.1) The Evaluation and Organization Management function competency areas account for the other 20 weeks of the total time difference between the Residential PhD and MA Only institutions. Given the Residential PhD programs' orientation to turning out ID managers and toward project evaluation, in addition to product evaluation, this result is congruent with the orientations of both categories.

*(5.2) It is surprising, however, that Commuter PhD programs spend less time on competency areas covering Evaluation and Organization Management, given their purpose/orientation and additional 60 credit hours.

*(6.1) MA Only programs spend a much larger amount of time (more than 3/5 of a course) on Personnel Management (interpersonal skills) competencies than do either of the other two categories—and are the only programs that spend a significant amount of time on them. This is surprising since these skills are, according to the literature, important for all developers at whatever level and in whatever setting they work—and should be even more important if one is in the kind of managerial role the PhD programs suggest they prepare students for.

*(7.1) Within the Design function competency areas, all institutional categories spend relatively small amounts of time on the front-end analysis competencies. This is surprising, given the importance—according to the literature—of appropriately identifying the problem before trying to solve it.

*(7.2) Within the Design function competency areas, all institutional categories essentially ignore (with the exception of 1 institution) the Performance analysis and solutions competencies. This is surprising, given the literature (and a whole professional association—NFSPI) which indicates the frequency, importance, and cost-effectiveness of such solutions to the problems that initially seem to be instructional/training problems but really are not.

*(8.1) In terms of the groupings of institutions based on their above average, average, and below average amounts of time spent on competency areas, it is surprising to find two MA Only institutions—GSU and RIT—just below the Residential PhD programs overall, and above the Residential PhD programs in the Design Function competencies. One would expect them to be way below the PhD programs based on time available in the degree program. It is also surprising to find the Commuter PhD programs with the most below average times, both overall and for Design competencies, based on their purpose/orientation and the amount of time available.
Conclusions and Discussion

Based on the Results and Analysis presented in the previous sections, the author believes there are nine areas about which conclusions can be drawn and discussion is needed.

Limitations. Before the more specific conclusions and discussion to follow, it is necessary to state and discuss a more general one. The results of this study dealt with amount of time spent on competencies in university ID curricula. They do not pretend to indicate, in any way:

1. the quality of the performance of students graduating from the programs studied
2. the quality of ID programs based on the variable studied or other variables
3. whether spending more or less time on competencies in curricula, beyond some attention to them as indicated in the literature, is positive or negative.

The quality of student performance is the payoff for any graduate program in ID. That outcome can be influenced by any number of process variables, including the curriculum, the quality of the faculty, the quality of teaching, the quality of students entering the program, etc. There is no assurance that there is a relationship between the curriculum of an institution and the quality of performance upon graduation—though common sense would suggest there must be some or there would be no need for the curriculum in the first place. Further research is clearly needed in establishing such a relationship.

The "quality" of an ID graduate program is determined by all the factors mentioned in the previous paragraph. Therefore, when this study compares institutions' curricula and uses terms like "above average" and "more time than," it is not evaluating the quality of that institution's ID program. It is simply comparing the curricula, and indicating what competencies an institution, or group of institutions, emphasize and do not emphasize.

How much time is "appropriate" to spend on a particular set of competencies in an ID graduate program has not even been studied, let alone determined. It does seem to make sense that if a competency is deemed to be important, and if students do not possess it when they enter the program, then some type of experience should be built into the program to assist the student in attaining it. Beyond that common sense notion, there is nothing to indicate what the nature or length of that experience ought to be.

Therefore the fact that an institution spends more or less time on a competency is neither "good" nor "bad"; it is, most probably, an indication of either (a) the relative importance the program attaches to that competency in the total ID process; (b) the research interests of the faculty; (c) the abilities and needs of the students based on entry level skills and job expectations; or (d) some combination of the above 3, and other factors.

Utility of the Study. Given those limitations, the author believes the study does have important findings that can be useful to several different groups.

Students can use the study to help in their selection of a graduate ID program. While the study can, and should, be only one of the factors they consider, it does give them information about the orientations of the programs, about how the curricula were developed, about how ID is learned, and about the competencies the programs emphasize by spending the largest part of their curricula on them. Students can match their own learning needs and styles, and job expectations, with this information, and (along with the other factors) select institutions that are perhaps more likely to meet their needs and interests.

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Faculty can use the study as one of the inputs to curriculum re-design. If a faculty sees, in looking at the data, an area or set of competencies which they feel they currently spend either "more or less time" on than do other institutions, they may wish to increase or decrease their emphasis on that area. At GSU, for example, the author used the data to identify the areas in which the program spent less than the average amount of time, and redesigned the curriculum to increase those areas he considered "weak."

Employers can use this analysis of curricula as one of their inputs in deciding at which institutions to recruit prospective employees. If an employer wants an employee strong in project evaluation, then s/he can save time by looking primarily at institutions that emphasize evaluation and are oriented to project evaluation. If an employer wants an employee who can do front end analysis and implement performance as well as instructional solutions, s/he can primarily look at institutions that emphasize these areas in their curricula.

With this general discussion in mind, it is now appropriate to move to the more specific conclusions.

Commuter PhD Programs. The 2 Commuter PhD programs studied spent less time on every competency area than did the Residential PhD programs studied, and, surprisingly, less time on every competency but Research/Theory than did the MA Only programs. In light of their purpose/orientation, "advanced ID competencies with a base in production and research applied in business and industry," and the 60 credits beyond the MA they have available for courses in the program, this finding is extremely surprising.

One would expect, all other things being equal, that they would spend the same amount of time on the ID competencies used in this study as did the Residential PhD programs, because they have similar (though not identical) purposes. One would similarly expect that Commuter PhD programs would spend more time on the ID competencies than did the MA Only programs because of the additional hours available.

Obviously, all other things were not equal. The author has no idea what those other things might be, but they certainly seem to be worth investigating in the future given the surprising results those other things yield.

Institutional Category Emphases. Based on the results and analysis, one can conclude that, where emphases equals time spent,
If one wants to learn/emphasize

Design Competencies
Residential PhD and MA Only institutions equally, with GSU and RIT more than any others

Research/Theory competencies
Residential PhD institutions

Evaluation (esp. project) competencies
Residential PhD institutions

Diffusion/Change competencies
Residential PhD institutions

Interpersonal Skills
MA Only institutions

Practical Business/Industry orientation
MA Only and Commuter PhD institutions equally

ID taught in formal courses
MA Only institutions

Individual Institutional Emphases
Based on the amount of time spent on the competencies in their curricula, the following institutions emphasize the competency areas next to their names by spending an amount of time far in excess of other institutions on it:

- Florida State—Evaluation, Diffusion/Change, Front End Analysis
- Governors State—Front End Analysis, Performance Solutions, Interpersonal skills
- Indiana—Task/Content Analysis, Evaluation, Diffusion/Change
- Rochester Institute of Technology—Front End Analysis, Task/Content Analysis, Interpersonal Skills
- San Francisco State—Project Management
- Syracuse—Project Management, Organization/Sequencing Instruction, Instructional Strategies, Evaluation, Conduct/Cite Research
- University of Southern California—Instructional Strategies

Areas not emphasized. Based on the numbers of course weeks spent on the competency areas, both overall and by institutional category, there seem to be 5 areas that stand out as having relatively little, or no, emphasis placed on them in the curricula studied. Those competency areas are:

- Front End Analysis—relatively little emphasis (4.3 weeks overall)
- Performance/ID/OD solutions—virtually none (except for 1 institution)
- Interpersonal Skills—virtually none except in MA Only institutions
- Evaluation—relatively little except in Residential PhD programs
- Project Management—relatively little (less than one course average)

This is surprising in light of the importance placed on these areas in the literature (Diamond, Durzo, & Doughty, 1979; Bratton, 1979-80; Gilbert, 1978; Kaufman, 1972; Dick, 1980, and other writers on evaluation), and by employers both in academe and business/industry.

Number and Types of ID Courses. The overall average data from nine institutions studied showed that (a) the number of "how to" design function courses was about 3, (b) the number of "advanced ID" courses, which were really theory/research/management of ID, was about 5, (c) the total number of courses addressing the overall instructional development related competencies (excluding production) was about 9 overall, and 13 for Residential PhD programs. These numbers raise three questions for the author.

First, are 3 courses adequate to learn all the "how to's" one needs to be competent at the design portion of the ID process? There were 18 competencies in this study that fell into the design portion of ID, creating an average of 2 1/2 course weeks, or 8 class hours, in the whole curriculum dealing with each competency. It seems to the author that this is a small and inadequate amount of time to teach the relative complex competencies that are required in our field. The author believes further research is needed to determine if this amount of time is adequate, and if not, how much is needed.

Second, what do PhD institutions really mean by "advanced ID skills." Since the Residential PhD and the MA Only programs had the same number of "how to" ID courses, the logical inference is that "advanced" ID skills were not more "how to" skills, but rather were skills related to theory/research and management of ID. The author believes the field needs to clarify what it means by "basic" and "advanced" ID skills, both so it can design appropriate curricula and so that it can communicate the difference to others—especially employers.

Third, are 9 (or 13) courses (plus, perhaps, some production) all one needs to be competent in all areas of the instructional development process, and if so, what are programs that require more courses than that teaching in the hours beyond 27 or 30 they require? As with the first question, the author believes that 9 or even 13 courses is not sufficient. The author was not able to ascertain what Residential PhD programs teach in the 51 additional hours they require. If those hours are reserved for related minors, we have the interesting situation in which the minor requires more hours than the major. The author believes that both parts of this question require further research.

Orientation to ID. As discussed in general conclusion 8.1, some institutions regard ID as a systematic/replicable/scientific process, while others regard it as a holistic/systemic process. Some believe in "one model," others in synthesizing models. Some believe in teaching a model, some in teaching many models and having students select/create their own. This study found no pattern among institutions as to their orientation, but it did find that the content and teaching approach of the program of the institution reflected on its philosophical orientation.

Virtually no work has been done on the different orientations to ID (beyond that in the September, 1981 issue of Performance and Instruction). Since orientation affects how one does and teaches ID (as do, for example, the differences in orientation to evaluation of Stake, Scriven, and Cuba), it seems to the author that this is an appropriate and important for future research.

Summary
This article has summarized a study of the curricula of nine graduate programs in Instructional Development. It has discussed the methodology used, presented general comparisons among the categories of institutions, presented the data on the amount of time individual programs and categories of institutions spend on ID-related competencies, analyzed the general and specific comparison results, pointed out highlights, drawn several conclusions about the emphases of institutional categories and individual programs, and raised questions about issues related to ID training that the author believes require more research.

If taken in the spirit in which the study was conducted and reported, the data, analysis, and conclusions presented here can be of use to students, employers, and especially to faculty at all ID training in-
stitutions who wish to analyze their own institutions objectively and address some of the questions raised here.

References
Performance and Instruction, September, 1981, XX (7), whole issue.

Footnotes
1The study described in this article was carried out from January to June, 1981, while the author was on sabbatical leave as Visiting Professor at the Learning Systems Institute, Florida State University. The views expressed herein, however, represent those of the author and not those of LSI or FSU. I am grateful to: FSU for facilitating my work on the study; the faculty of the nine institutions studied for allowing me to visit their programs; and the late James D. Fias (my mentor) for giving me the courage to conduct and publish a study like this.
2A more complete and detailed description of the study, its methodology, its results, and its conclusions will be contained in a Monograph to be published by the Learning Systems Institute in late Fall, 1982. This article is based on the abbreviated presentations of the study given at the 1982 AECT and NSPI national conventions under similar titles. The main items missing from this article, which will be included in the Monograph, are: detailed discussion of the methodology of the study; discussion of the caveats and delimitations of the study; data charts showing the competency analyses and general factors by individual institution; and the author's subjective impressions about the state of ID training in general and suggested areas for improvement.
3The words "expectations," "surprising," and "interesting" in the Analyses and Conclusions sections refer to differences between what data showed and commonly held conceptions and misconceptions about ID training and individual programs, or ID training and categories of institutions. They do not refer to the author's biases or formal hypotheses about "the right way to do ID training."