

HOW DO INSTRUCTORS IN THE FACULTY OF EDUCATION DESIGN THEIR UNDERGRADUATE COURSES?

Evren SUMUER, İlker YAKIN, Soner YILDIRIM
Middle East Technical University

ABSTRACT: This study is an attempt to explore instructors' mental models for instructional design process as designing undergraduate courses in the Faculty of Education. The study will employ a qualitative research method to understand instructors' instructional design practices and the factors that have an impact on their design process. Three instructors whose one of the main interests is instructional design were selected from the Faculty of Education at one of universities in Turkey. For an exploratory and in-depth examination of instructors' design process, in-depth interviews conducted as a main data collection technique. The findings suggested some common and unique themes in instructors' instructional design process.

Keywords: Instructional Design, Faculty of Education, Qualitative research

1. INTRODUCTION

Instructional design is a systematic process that helps instructors or instructional designers to create effective and efficient instruction, enabling to optimize student learning. Instructional design consists of activities and processes related to planning, teaching as well as testing instruction. Over the years, a number of instructional design models have been developed with different intentions. Although a various instructional design models have been described, all of them include core elements as analysis, design, development, implementation and evaluation (ADDIE) (Gustafson & Branch, 2002). These models are categorized into two; "macro-design" and "micro-design" models (Banathy, 1987). Micro-design models include ID models at course level and these models have a great potential for instructors in higher education to make courses effective and efficient.

Because of the on-going and complex nature of course and university settings, most instructors need to design or re-design their courses to meet particular needs. In this aspect, instructors can be regarded as instructional designer. It is important to understand higher education instructors' actual instructional design practices and range of factors and problems that impact on design process since they play a significant role to improve instruction and eventually student learning. However, the available information on instructors' use of instructional design practices is not adequate.

This study is an attempt to explore instructors' mental models for instructional design process in the Faculty of Education as designing undergraduate courses. In Turkey, although the Council of Higher Education determines common course requirements of the programs in Faculty of Education, the rest (e.g. course contents, grading systems, degree requirements and so on) is determined by instructors in faculties. In on-going and complex setting of higher education, instructors in Faculty of Education need to design their course to provide effective instruction. Therefore, in Faculty of Education, although instructors' instructional design process is influenced by curriculum of the faculty, how they practice instructional design process is not apparent.

2. LITRATURE REVIEW

2.1. Instructional Design

In the literature, instructional design (ID) (a.k.a instructional development, instructional systems design) is defined from different perspectives. One of them is that ID is "a body of knowledge that transcribes instructional actions to optimize desired instructional outcomes, such as achievement and affect" (Reigeluth, 1983, p.5). From the different point of view, Simith and Regan (1999) explain ID as "the systematic and reflective process of translating principles of

learning and instruction into plans for instructional materials, activities, information resources and evaluation" (p.2). Also, Moallem (1998) defined ID as a systematic process for thinking and planning that is suggested to help teachers, or instructors, determine both how and what is to be taught. As a result, ID has an important function of helping educators create effective instruction in an efficient manner to enable learners to achieve learning outcomes.

The general procedures on which ID models are mostly focused are brought together into five phases: (1) analysis, (2) design, (3) development, (4) implementation and (5) evaluation and revision, conceptual components of ID. These phases are referred to as ADDIE model, or generic ID model (Mollenda, 2003). Although these core phases of ID remain same in all models, they differentiate from each others in how to practice these phases across varied settings.

ID in higher education consists of faculty-centered activities although they are constrained by higher education policy and the administration (Terlouw, 2001). In order to realize the activities of a faculty, ID in higher education takes place at the administrative level, the curriculum level, and the unit level in an integrated manner. As Terlouw (2001) indicates, ID process at the administrative level focuses on rules or regulations for the faculties, teachers and students while ID process at curriculum level gives emphasis on curriculum in a faculty. The central point of ID at the unit level is mainly course or module.

2.2. Instructional Design Process at the Course Level

According to Terlouw (2001), instructional design process at the course level is driven by instructional objectives of the course and specific entry characteristics of the students for the sequence of the learning, the instructional formats, and the assessment, control, and evaluation of the course. It is also under effect of the curriculum of the faculty and the regulations of national system of higher education. Furthermore, Diamond (1989) proposed a system-oriented ID model that is applicable to individual courses. In addition, even though Posner and Rudnitsky (2001) relate course design to curriculum development, their instructional design model is for a course or a unit.

2.3. The Role of University Faculty members in ID

The role of the university faculty members in the instructional design process is to decide on content, instructional strategies, identify media, deliver the instruction and evaluate it (Gustafson & Branch, 2002b). However, university settings have on-going and complex nature. Therefore, university instructors make decision about instruction in the absence of absence of certainty about outcomes.

There are many factors affecting instructors', or teachers', instructional design decisions. Instructional objectives of the course, specific entry characters of the students, content expertise, information and skill about teaching, availability of the resources for developing, reflection on previous actions, resource and materials are some factors found in the literature (Gustafson & Branch, 2002b; Moallem, 1998). In addition, Zook (2001) mentioned the following impediments to classroom-based designs; time and learner variability (classroom-level), grade-level organization, subject differentiation within curriculum, time-period, class size (school-level), subject-knowledge and attitudes (personal). In the literature, there are not many researches and much information on instructors' use of instructional design practices.

3. METHODOLOGY

This study employed naturalistic research method to study instructors' design process while designing their own undergraduate courses in the Faculty of Education. Along with the interpretive research paradigm, this study assumed that each instructor has his own thinking on the design process of his courses. Naturalistic approach enables researchers to get meanings people make on the phenomena (Denzin & Lincoln, 2000). Therefore, this study is based on a phenomenology approach in exploration and in-depth examination of how instructors in Faculty of Education experience this process while designing their undergraduate courses.

3.1. Selection of ID Instructors

In naturalistic inquiry, the information-richness of the cases selected and the analytical capabilities of the researchers are valuable than sample size (Patton, 2002). Therefore, naturalistic inquiry sample is small but it provides in-depth and rich information for the research interest.

In the selection of instructors, it was essential to purposefully select Education Faculty instructors whose one of the main interests is ID. Three instructors were selected from Faculty of Education which was convenience for us. Two of them were from the field of instructional technology. The other was from the field of curriculum and instruction. All of them are interested with ID and gave some courses related to ID in the undergraduate and graduate level in Faculty of Education. Therefore, the intensity sampling was utilized. Information-rich participants, not highly unusual ones, were selected from Faculty of Education in one university. This selection enabled us to illuminate instructors' design process sufficiently.

3.2. Data Collection

In order to obtain in-depth understanding and detailed information about instructors' design practices on the design of the courses at the undergraduate level, in-depth interviews with them were undertaken. The data include only transcripts of the interviews.

In-depth interviews focused on instructors' design practices covering generic ID model, the factors that influence their design decisions and the problems that they see in the design process of undergraduate courses in the Faculty of Education. Interviews were based on the general interview guides approach. This means that questions and issues were listed before the interviews. This approach was preferred because the general interview guides approach increases the quality of the data, makes data collection systematic and interviews conversational. In the interviews the questions were asked in the same order. This facilitated to find responses and compare them with each other in the analysis. Interviews were recorded with interviewees' permission. Each interview lasted about 35 minutes. During the interviews some notes, especially notes about interviewees' body language and affect, were taken. After all interviews had been completed, they were transcribed by researchers. Before the interviewing, interviewer wrote his own experience related to ID process to make his preconceptions clear.

3.3. Data Analysis

Data analysis was done after all interviews had been made. Analysis of all data was based on content analysis Firstly, the data were conceptualized and organized on the basis of meaningful and significant segments in the data representing idea and activity relevant to ID. Then themes, issues and patterns related to ID practices were found. Subsequently, themes and concepts were organized to describe the data in terms of each specific phase in generic ID process. To assess reliability, analysis of the data was conducted by two of the researchers independently and 86% level of agreement was reached. After the discussion about the themes and concepts revealed in the analysis, the researchers reached consensus on them. Lastly, the data were interpreted and the relationships between the findings were explained. As a result, some common and unique themes in instructors' design process were revealed in the analysis.

4. RESULTS

The common and unique themes revealed in the analysis were presented under the core phases of generic instructional design model.

4.1. Analysis Phase

The information obtained in the interviews organized under the headings content analysis, task analysis, need assessment and context analysis.

All of instructors emphasized on the relation of the course with common requirements which are identified in the curriculum set by the Council of Higher Education when defining the content

of the course. In addition, while two of the instructors stated that the specific entry level of the students and their own vision of learning are the bases for the definition of the content of the course, the other instructor stressed the content of the course book in the content analysis.

Interview results showed that instructors differently conducted task analysis. One of them stated that the tasks serving teacher format in his mind were important in the course whereas one of the others indicated that he defined the tasks covered in the courses with the help of his experiences and literature related to course. The other one emphasized on teaching or acquisition routines implying the essential subject matter in the task analysis.

With regard to need assessment, two of the instructors base entry level of the students and their observation in the course. The other one emphasized that he disregarded the students' needs by reasons of crowded class size, inadequate number of teaching assistant, heavy workload and time constraints.

Lastly, availability of the resources in the context revealed to be an important factor in the context analysis for all instructors.

4.2. Design Phase

The information obtained in the interviews organized under the headings of sequencing content, planning instructional strategies, handling with student diversity in instructional strategy and the identification of the instructional materials.

Two of the instructors indicated that entry behaviors of the students and the lesson designed by other instructors were considered as sequencing content. Also, two of them place emphasis on the structure of the subject matter. In addition, as sequencing the content, one of instructors stressed on role of his intuition and previous experiences while one of the others take the curriculum of the faculty into consideration.

Interview results also revealed that two of the instructors pointed their previous experiences as important conditional functions in planning instructional strategies. In addition to previous experiences one of them emphasized on connecting the instruction with the entry level of the student and their own vision of learning. The other instructor stressed on instructional objectives and characteristic of the subject, abstract or concrete, in the identification instructional strategies.

Regarding the way the instructor dealt with student diversity in instructional strategies, two of the instructors indicated that they use single method in the course due to time constraints as a main reason so they did not address student diversity in their courses. On the other hand, the third instructor stated that he employed diverse multimedia materials and examples to handle student diversity in his courses.

In terms of the identification of instructional materials, or resources, interview results revealed that two of the instructors stressed materials for providing concrete knowledge. Also, two of the instructors placed emphasizes on availability of the resources in their archive, library or internet as important conditional function in the selection of instructional materials.

4.3. Development Phase

The information obtained in the interviews organized under the heading of development of the instructional materials.

Two of the instructors emphasized that they regarded the objectives of the course as main concern in the instructional material development process. They also pointed that they only made editions after preparing the material once as they designed the courses. The third instructors pointed that they considered the type of knowledge he delivers, declarative or procedural, and his own ability in the material development. He said that if declarative knowledge is focus of the lesson, he developed materials for the lesson.

In terms of material development process, one of the instructors stated that he focused on key concepts for instructional message given by the material. The other one emphasized that he planned instructional materials in mind prior to developing them. Also, two of the instructors

expressed that the availability of media in the context had an important effect on the development process of the instructional material.

In the development of the instructional materials, instructors talked differently about the way they handle student diversity. Even though two of the instructors stated that visual design gave some facilities to handle student diversity in his material development process, the other one declared that he did not particularly handle the student diversity in the material development process.

4.4. Implementation Phase

The information obtained in the interviews organized under the headings of delivery format of instructional materials, changes in the content, considerations for inter-instructional decisions, and inter-instructional decisions.

Even though two of the instructors pointed that electronic format was common preferable one to deliver instructional materials because of easy accessibility, easy portability and convenient context for materials, the other one stated he did not give students instructional materials because he thinks that students can easily reach information in the materials from other resources.

Two of the instructors emphasized on students' reactions during the lessons as condition for inter-instructional decision. In addition, two of the instructors considered technical constraints as conditional function to made revisions in the course design. Furthermore, one of the instructors take previous experiences in the course into consideration while another one realized problems in students' entry-behaviors in his course implementation so they made some changes in the content to handle this issue.

With regard to instructional design decisions they took during the implementation of the course, two of the instructors indicated that they give students opportunities to compensate the failures of the students.

4.5. Evaluation Phase

The information obtained in the interviews organized under the headings of evaluation of student, evaluation of the course, post-instructional decisions and iteration of ID.

All of the instructors emphasized that students' progress in the course was regarded as main concern in the evaluation of the students. Besides students' progress, one of the instructors emphasized that if he gave objective test such as mid-term, students were evaluated in the light of objective test results. Moreover, he indicated that students' bona fides in the lesson were taken into consideration as evaluating students. The instructor said that he gave importance to process evaluation and do he employed incremental assessment. The other considered the rate of the students' participation in the course and assignment results for the student assessment.

Regarding the evaluation criteria the instructors considered, one of the instructors stated that he made assessment made in accordance with the content of course. On the other hand, another instructor regarded the learning activities done during the course as evaluation criteria for the students. In addition, the other instructor considered competencies in the definition of teacher by Ministry of Education as evaluation criteria if the course covered them.

Two of the instructors emphasized that the course evaluation form given students at the end of each semester regarded as useful indicator for the evaluation of the course. In addition, two of the instructors considered students' statement option about the course for the evaluation of the course. On the other hand, one of the instructors stated that he considered the assessment of the quality of the course product qualitatively to understand effectiveness of the course. Moreover, another one expressed that student reactions and exam results provided feedback for the evaluation of the course.

In terms of the way they took new decisions related to instructional design process, two of the instructors pointed that they took post-instructional decisions by considering observing the students' reactions in the course and made some improvements in the design of the course. On the

other hand, the other instructor pointed that the content of the course was not changed although some improvement in the instructional design was made.

5. CONCLUSION

This study explored instructors' instructional design practices from the instructional systems design (ISD) perspectives as they design undergraduate courses in the Faculty of Education. The content analysis of the interviews conducted with three instructors, whose one of the main interests is instructional design, suggested some common and unique themes for the instructional design process of the undergraduate courses in the Faculty of Education.

Based on common themes revealed from the analysis of the interviews data, common requirements of the courses which are set by the Council of Higher Education, entry level of the students and availability of resources in the context play important role in the analysis phase of the design process of the undergraduate courses. In the design phase, entry level of students is considered to sequence the content of the courses. In addition, exemplary lessons designed by other instructors provide guidance for the sequence of the content of the courses. Moreover, previous experiences, materials providing concrete knowledge, and time constraints to handle the diversity in the class are the other common issues emphasized by instructors in the design phase of ISD process.

In the development phase, the objectives of the courses are pointed as the main factor which is considered in the development process of the instructional materials. In addition, the effect of the availability of the media in the context of the course on the developmental process is stressed. It is also revealed that the visual design principles are considered as a facilitator to deal with the diversity of the students. In the implantation phase of the design process of the course, students' reactions and technical constraints are seen as requirement to make inter-instructional decisions for the course. In the evaluation phase of the design process, the effectiveness of the course is evaluated with the course evaluation form given students at the end of each semester and the observation of the student reactions. In addition to exam results, students' progress in the course is emphasized as a useful indicator for the evaluation of the students. Post-instructional decisions for the course are made by considering the students' reactions during the course.

As a conclusion, Instructors take a number of parameters in considerations while designing their courses. Some of such parameters and concerns of instructors were catalyzed through this study. However, future studies with much larger samples may lead other researchers to more applicable and generalizable results which may better help instructional design practitioners in their endeavor.

REFERENCES

- Banathy, B.H. (1987). Instructional systems design. In R. M. Gagné (Ed.), *Instructional technology: Foundations* (pp. 85-112). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Denzin, N. K., & Lincoln, Y. S. (2000). Introduction: The discipline and practice of qualitative research. In Norman K. Denzin & Yvonna S. Lincoln (Eds.), *Handbook of qualitative research (2nd ed.)*. Thousand Oaks, CA: Sage Publications.
- Diamond, R.M. (1989). *Designing and improving courses and curricula in higher education*. San Francisco: Jossey-Bass Publishers.
- Gustafson, K. L., & Branch, R. M. (2002a). What is instructional design? In Reiser, R. A. and Dempsey, J.V. (ed's) *Trends and Issues in Instructional Design and Technology*. Columbus: OH, Merrill Prentice Hall.
- Gustafson, K. L., & Branch, R. M. (2002b). *Survey of instructional development models*. Syracuse, NY: ERIC Clearinghouse on Information & Technology.
- Moallem, M. (1998). An expert teachers' thinking and teaching and instructional design principles: an ethnographic study. *ETR&D*, 46, 2, 37-64.
- Molenda, M. (2003). In Search of the Elusive ADDIE Model. *Performance Improvement* 42,5, 34-36.
- Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods*. Thousand Oaks, CA: Sage Publications.

- Posner, G. J. & Rudnitsky, A. N. (1997). *Course design: A guide to curriculum development for teachers*. New York: Longman.
- Reigeluth, C. M. (1983). Instructional design: What is it and why is it? In C. M. Reigeluth (Ed.), *Instructional-design theories and models: An overview of their current status*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Smith, P. L. & Ragan, T. J. (1999). *Instructional design (2nd ed.)*. New Jersey: John Wiley & Sons Inc.
- Terlouw, C. (1997). Instructional design in higher education. In S. Dijkstra, N. M. Seel, F. Schott, & R.D. Tennyson (Eds.), *Instructional Design: international perspectives. Vol. 2: Solving instructional design problems*. Mahwah NJ: Lawrence Erlbaum Associates, Publishers.
- Yildirim, A. & Simsek, H. (2005). *Sosyal bilimlerde nitel araştırma yöntemleri*. (2nd ed.). Ankara: Seckin Publications.
- Zook, K. (2001). *Instructional design for classroom teaching and learning*. Boston, MA: Houghton Mifflin.