Students' and Tutors' Perceptions of Course Quality at the Diploma II Program at Universitas Terbuka

A Thesis Submitted in Partial Fulfilment of the Requirement for the Degree of

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in the Department of Psychological Foundation in Education

University of Victoria

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by

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We accept this thesis as conforming to the required standard

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ABSTRACT

Students' and tutors' perceptions of the quality of course materials that are used in the Diploma II (D-II) study program at the Indonesian Open Learning University, or Universitas Terbuka, are evaluated in this study. Since the introduction of this program of study, evaluations have been infrequent. In order to assess the perceptions of students and tutors, ten evaluation criteria were utilized to construct the questionnaire and interview items.

Twenty three tutors and 216 students of two Diploma II (D-II) programs, the D-II Project in Jakarta and the D-II Self-funded program in Bandung, participated in this study. Two packages of printed course materials, Social Science Education 2 (PPDG2432) and Mathematics Education 3 (PPDG2431), were selected for evaluation. The selected course material represented two different compulsory subject areas, were relatively new releases at UT, and were presented as tutorials. The students and tutors evaluated the parts of the material that were currently being studied by them.

Three sets of research findings were obtained in this study. First, the students and tutors expressed positive perceptions toward course quality. Certain quality

criteria provided negative perceptions, a finding to which special attention should be paid. Specific suggestions for reconstruction of the design of course material were made to improve quality. The students in the D-II Self-funded program showed slightly higher levels of positive perceptions of course quality than those of the students in the D-II Project. Second, there was no relationship found between the students' perceptions of course quality and their achievement. Third, students revealed a relatively higher and more positive perception of course quality than did the tutors who expressed concern over some aspects of course quality.

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CHAPTER I

Introduction

Background and Statement of Problem

Instructional media have an important role in distance education systems which customarily use indirect methods of interacting with learners. In these systems, students do not attend lectures but conduct self-study by using learning materials provided by the educational institution. In the presentation of learning materials, most distance education systems use printed materials as the main instructional media (Moore, 1987). In other words, printed material is the most popular medium used in distance education. Quality of learning in distance education ought therefore to be closely related to the quality of materials provided to students. Thus, the general purpose set for this thesis is to examine the quality of a few instructional materials used in one distance education setting.

Distance education institutions usually provide support services to students so that they may understand the printed learning materials effectively. These services may take the following forms: supplementary media, such as audio, video, and telephone, or tutorials, either written or face-to-face. Many previous studies have shown that

these kinds of support services help students greatly in their understanding of the printed material (Bates, 1982; Crew, 1979; Holmberg, 1981; Tabachnick et al., 1978), but mostly students are expected to gain a considerable amount of their learning from the printed course material.

Besides the fact that printed material is important as an instructional medium, the quality of learning material has been found both to be very important in the development of the students' learning process, and to have a strong influence on the success of the students. For example, Chacon-Duque (1985) noted that good quality materials contribute effectively both to saving learning time for students and to promoting their academic success. Conversely, students will tend to drop out when the educational materials are poor (Whittington, 1985). If the materials are poor, the students will not learn much. Therefore, as the general objective of this study, determining course quality is necessary to increase the probability that the instructional materials provided for a course will enhance learning. The evaluation findings could be used as important feedback for improving the quality of the course materials, resulting in high quality learning materials.

Mouli and Ramakrishna (1991) stated that one method

for evaluating whether an instructional material is likely to do its job adequately and to judge how good it is, is on the basis of feedback from the users of the materials, both tutor-counsellors and learners. Without information about the effects of course materials on students and their tutors, effective writing and short term modifications are impossible (Meacham & Evans, 1989). Chacon-Duque (1985) added that the reactions of students should be systematicly collected to facilitate the improvement of the quality of learning materials, so that revisions will be based on the appropriate aspects of the course. Obviously, the involvement of the users of course material in the evaluation process is necessary to obtain more accurate results.

The course material at the Indonesian Open Learning University. In the Indonesian Open Learning University, or Universitas Terbuka, which conducts distance education, printed course materials also play an important role in the institution's teaching learning process.

In 1991, after seven years of operation, Universitas Terbuka (UT) offered 530 courses, all of which use printed materials. These 530 packages are divided into 4770 instructional modules (see Katalog Universitas Terbuka, 1991). One course usually uses one package of

printed material as the learning materials. The material is divided into either 6 or 15 discrete modules, depending on the number of credits of the course. One credit requires three modules. Each module represents roughly three weeks of work. Thus, it is assumed that students will complete the material in six months.

To evaluate the students' learning outcomes in the course, UT conducts self-assignments, and/or lab work, and final examinations. Lab work consists of the teaching-learning activities in laboratory or in other related places. For courses requiring lab work, the lab work results will contribute 15% to the student's final grade (15% is contributed by the self-assignment results and 70% by the examination results). For courses which do not require lab work, the assignment results will contribute 20% to the student's final grade and 80% is contributed by the examination results. A Self-assignment, which is a take home test, covers 50% of the learning material. The self-assignment results are not generally counted in the final grade for the course. When the student's examination result is lower than the cut-off point for passing, then the self-assignment results contribute to the final grade.

The model of course development in UT is the author editor model. Authors are contracted to write a course,

which is then edited by UT staff within the faculty. The role of editors is more comprehensive than merely responding to the draft material. The editor provides a service to the authors that includes locating relevant photographs and other graphic material, ordering tapes and other audiovisual elements, and applying appropriate formats to facilitate the learning process. Since 1989, however, several course materials have been written and developed by UT academic staff. One module usually is written either by just one academic staff member or two staff members as a team.

Universitas Terbuka, the one higher education institution in Indonesia, which conducts distance education, was founded by the government in order to meet four goals: expand the opportunities for high school graduates of all ages to study at the university level; produce experts for various levels of national development; improve the competence of teachers; and support national development by producing skilled manpower. Through its four faculties (Faculty of Economics, Faculty of Education, Faculty of Mathematics and Natural Science, and Faculty of Social Science and Politics), UT offers the same programs as do conventional universities. The currently available programs include undergraduate programs, diploma programs,

and certificate programs.

The one diploma study program in the Faculty of Education in which a number of elementary school teachers is enrolled is the Diploma II study program. Up to the present, the number of active students in this program is very high, e.g., 71,853 students or about two thirds of the entire enrollment of UT (see Statistika mahasiswa Universitas Terbuka 1991). In 1990, this in-service training program was initiated to provide a chance for elementary school teachers to obtain a higher education equivalent to the diploma II degree level. Teachers can improve their qualifications without leaving their jobs in the schools. To obtain their degree, the student must finish 27 courses consisting of 82 credits in total, conducted in six semesters.

The number of elementary school teachers in all provinces throughout Indonesia is about 1 200 000. The number of the teachers who can attend the Diploma II program per year is between 20 000 - 30 000, not including the teachers in remote areas. Therefore, it would require about 40 years to improve the qualifications of all elementary school teachers in Indonesia (Djalil et al., 1992). Since this study program will deal with a large number of UT's students for such a long time, it is

necessary to investigate whether the course materials used as learning resources for the students meet the criteria for quality.

Diploma II study program. There are two kinds of Diploma II (D-II) programs presented in this study program; the first is the Diploma II Project and the second is the Diploma II Self-funded program.

The D-II Project is a study program which is allocated for public elementary school teachers and principals who live in rural and remote areas. This diploma program is fully sponsored by the government. Due to budget limitations, this program is being implemented gradually. There are several criteria used to select students who are eligible for this program. First, the students must be between 35 - 45 years old; and, second, they must have adequate experience in teaching, generally more than 5 years, and good performance in their jobs. All the course materials utilized in this program are lent to students. Thus, every semester, students borrow several required course materials and return them at the end of the semester.

The other program, the D-II Self-funded program, is offered to the elementary school teachers who live in towns or cities, or who teach in private schools. This program

is offered in order to accommodate many more students, so the improvement of the qualifications of all Indonesian elementary school teachers will be completed in ten years (1991-2000). (See Katalog program penyetaraan Diploma II, 1991). The students in this study program have to pay for their program, including the tuition fees and course materials. The requirements for students to attend this study program are good performance in their jobs and their ability covers the costs associated with their studies.

The Diploma II Project program provides supplementary media, such as audio cassettes, for all courses which are used in the tutorial group or broadcast on the radio. UT also uses television programs for certain courses in other study programs. It was decided that such media would not be given to the D-II study program because their function had been replaced by the intensive tutorials. For the students in both the D-II programs, intensive tutorials are provided in order to help students to understand the learning materials. Each course is presented as a tutorial.

Since the D-II study program has been operating, there have been only three individual studies of course materials conducted by UT academic staff (Nuzia, 1991; Ristarsa, 1991 & Rusmana, 1991), of which only two involved a number of

the course material users. The other study which involved the course material users was the monitoring and evaluation of the implementation of the Diploma-II study program conducted by UT and the Directorate General of Higher Education and Culture of the Ministry of Education (Djalil et al., 1992). There have been no other studies conducted to assess the quality of the course materials in this study program.

The intensity of the research endeavours in course materials as instructional media should be increased in order to improve the quality of the course materials. In light of the length of time that the course materials will be utilized in this study program (more than ten years), a thorough investigation of how the course materials work as instructional materials, based on the users' perceptions and their perceived needs for module improvement, is essential. The evaluation results will be used as part of the course development activities of UT staff in writing course materials and in the transition from draft materials of module writers to complete sets of course materials.

The use of specially designed learning materials which are unlike textbooks is one of the important ways in which distance education differs from conventional education. The materials in distance education usually consist of

units which include a statement of lesson objectives, a reading assignment, a commentary and study guide, and a written assignment to be completed (Moore, 1987). Thus, the quality of textual materials relates to the quality of those units of the learning materials.

In order to conduct an effective evaluation of the course material quality, it is necessary to develop an evaluation framework for course quality which consists of criteria of good quality learning material in distance education. To obtain comparable indexes of quality in respect to the instructional media, all components in the course packages will be analyzed according to the evaluation criteria.

Investigation of the relationships between the quality of instructional materials and student success also is important. Student success in this study is related to the student's final examination results (e.g., the raw scores) in the course material being evaluated. For the purpose of this study, the self-assignment results were ignored, because the self-assignment, a take-home test, is usually done by the students together.

The Purpose of the Study

The purpose of this study is to evaluate the quality of modules as instructional materials based on feedback

from students and tutors, to investigate the relationship between that quality and student achievement, and to generally assess the differences in course quality perceptions between students and tutors. A secondary thrust is to develop and test an evaluation framework for measuring course quality. Attempts will be made to estimate how well student expectations and needs are met through the course materials currently in use.

Definition of Terms Used

For the purpose of this study the following terms are defined to clarify and place in context:

Quality: in relation to the course materials, the term, quality, refers to the score on the evaluation criteria. A larger number indicates a better quality of the material.

Achievement: is the grade (raw score) achieved by students in their final examination, before being combined with the assignment results.

Perception: the reactions of individuals (students and tutors) in response to the course material which they used as learning and teaching resources. With the perception of the course quality, decisions are made which lead to either the fulfilment or non-fulfilment of expectations and goals.

Research Questions:

1. Based on the evaluation-criteria which will be generated, how well do the modules meet the criteria for quality? What are the variations in the perception of quality between courses, and between the two D-II programs?
2. Is there a relationship between the quality of the modules and student achievement and, if so, what is the nature of that relationship?
3. Do students and tutors perceive (evaluate) the quality of modules in the same manner? Why or why not?

CHAPTER II

Review of the Literature

In the following literature review section, there are five topics to be reviewed: 1) the previous studies about the course materials conducted at Universitas Terbuka (UT), 2) the results of the previous work, 3) experts' general views of how instructional materials should function, 4) criteria for general use, and 5) adapting the criteria for use at UT; all of which will ultimately become the basis of the evaluation criteria in this study.

Previous Studies of the Diploma II Course Materials at UT

Several studies concerning the learning materials of the Diploma II study program have been conducted at UT. There were three individual studies which were conducted by UT academic staff and one study --monitoring and evaluating the implementation of the Diploma II study program-- which was conducted by a team from UT and the Directorate General of Higher Education of the Ministry of Education and Culture. This kind of study will be conducted periodically in the future.

The three individual studies, apprentice research projects for UT academic staff, focused on the investigation of the module condition by the use of several approaches. Two studies involved a number of the course material users, students and tutors who were involved in

tutorials close to the main UT campus at Pondok Cabe, Jakarta, as participants. There was no involvement of the course material users in the other study. Thus, in this individual study, the UT academic staff member analyzed the condition of the course material using a selected approach developed by the staff member herself and then reported the results.

The monitoring and evaluation of the implementation of the Diploma II study program comprised the evaluation of the course materials used. This study involved students and tutors of the Diploma II Project and the Self-funded program from throughout the provinces in Indonesia as participants.

Results of Previous Work

Ristarsa (1991) and Rumanta (1991) took the same approaches to investigating the quality of course materials, however, they used different course materials as samples, e.g., the Mathematics 1 course material and the Natural Science 1 course material respectively. Participants were asked to give general comments directly in their modules for several criteria used and were interviewed for more clarification.

The research findings were that students faced difficuties in understanding 5% to 10% of the graphic aids presented because they were not clear, 1% of sentences used

because they were too long, and 5% to 10% of terminology appearing because it was not explained. Typographical errors also comprised 10% to 15% of the words in a module. About one third of the formative test and key answers needed revisions, and a few concepts needed more clarification. About 43% of the participants stated that, in general, the course materials were difficult to understand.

Nuzia (1990) evaluated and analyzed the consistency of the Social Science 1 course material and the Basic Course Outlines. The whole package of the course material consisted of 12 modules. She found that the general and specific objectives of module 1 and the specific objectives of module 6 were not consistent with the Basic Course Outlines. The general and specific objectives for the other modules, however, were consistent with the Basic Course Outlines.

The Monitoring and Evaluation of the Diploma II study program (Djalil et al., 1992) was an attempt to determine whether the learning material used in Semester II met the criteria for comprehensibility, self-sufficiency, relevancy, and up-to-date information. Three sets of course materials were selected as the course material sample for this study: 'Pancasila' 1 (the five principles of the philosophy of life of Indonesian people), Indonesian

Language 1, and Natural Sciences 2. Each participant was sent a learning activity of one module, the learning activity to be studied for 8 -10 days. They were then asked to evaluate the learning material. Interviews were also conducted to obtain more information.

Djalil et al. found that about 63% of the course material sampled was considered to be difficult to understand by students and 39% of the course material sample was considered to be difficult by tutors. About 20% of participants perceived that the course materials were not self-sufficient and were not relevant to the students' jobs as elementary school teachers. About 50% of the participants indicated that the course materials did not take into account the advances of knowledge in the discipline.

Experts' Views of the Function of Instructional Materials

Based on the results of previous investigations, attention should be paid to the development of high quality learning materials for UT. In order to distinguish the characteristics of high quality learning materials in distance education, the views of several instructional materials experts are presented.

According to Meacham and Evans (1989), study materials should be designed for as large a variety of readers as possible. They should be arranged such that they can be

used in the way which most suits the individuals who have different styles of learning, different needs and expectations, and different strengths and weakneses. Good learning materials are based on a clear presentation of the structure of the material to be learned; the role of textual design is to make explicit the underlying structure by using linguistic, spatial, and typographic cues to form sequences and delineate segments.

According to Moore (1987), the characteristics looked for in printed courses include good structure, self-sufficiency, personality, and attention to learner autonomy. Structure refers to how to present and organize content; self-sufficiency relates to giving students a sense of accomplishment when working through the course; personality refers to conveying to the students a sense of excitement, discovery, and satisfaction; and learner autonomy alludes to structuring the printed course material in order to allow enough space for students to explore outside the course, to use their own experience, and to bring their own self-discovered knowledge to the course.

At the British Open University, MacDonald (1979) has specialized in the study and research of readability formulae and has used word length and frequency, sentence length, and similar measures to predict reading difficulty. He has indicated that there is a clear relationship between

readability and learner acceptability as well as between readability and efficiency of reading.

Criteria for General Use

Based on the aforementioned experts' views and the previous study results at UT, it is clear that the need to produce good quality instructional material has been set as a high priority. A central concern has been to derive quality criteria for developing high quality learning materials. For the purposes of this study, the criteria proposed by Chacon-Duque (1985) are combined with other experts' criteria for effective learning materials. The following 14 design techniques resulted. They are considered to be important for increasing the effectiveness of print material as a learning tool. In addition, these criteria are drawn from different perspectives, both psychological and practical. Thus, they do not necessarily follow one from the other. The criteria are:

1. Statement of objectives. Chacon-Duque (1985) and Marland and Store (1982) claimed that objectives serve to cue or inform the learner of the specific tasks to be accomplished. In addition, they also used devices that help students organize information hierarchically and divide the text into "clusters" of information related to objectives. Frase (1975) argued that instructional objectives reduce the number of irrelevant bits of

information that impinge on the learner. The inclusion of objectives resulted in improvement in subsequent test performance.

2. Advance organizers. Ausubel and Robinson (1969) and Chacon-Duque (1985) argued that the use of advanced organizers relates to placing a high level of generality and abstraction in advance of the following subordinate passage. Advance organizers can be used to present concrete models and high order rules, draw analogies, examples, general discussions and meaningful comparisons (Meacham & Evans, 1989). Overviews have similar purposes to advance organizers, but written in a lower level of abstraction. According to Marland and Store (1982) an overview should highly condensed outlines of teaching subject matter and contain explanations of key terms.

3. Staging devices. Chacon-Duque (1985), Meacham and Evans (1989), and Shaw and Taylor (1984) asserted that staging devices were defined as ways of pointing to the hierarchical organization of ideas, through carefully sequencing information into manageable segments, such as using various headings, underlining key terms of sentences, grouping sentences referring to the attributes of an object in a single paragraph, and using terminology and content markers to aid emphasis and information retrieval.

4. Supporting writing style. Holmberg (1982), Meacham and Evans (1989), and Moore (1987) defined supporting writing style as writing in a way that is both intelligible and stimulating. This may include using variety in vocabulary and sentence structure; using clear, simple, and supportive language; using active voice, affirmative statements, abstract nouns, and more personal pronouns; and using appropriate terminology.

5. Vocabulary aids. Chacon-Duque (1985) and Stahl (1983) urged the use of vocabulary aids, meaning to highlight important points within the text by presenting glossaries of technical terms inserted as appendixes. Melton (1990) added that text comprehension also can be facilitated through building into the text devices such as margin notes or indexes linked to margin notes.

6. Graphic aids. Chacon-Duque (1985), MacDonald (1979), and Paivio (1971) suggested the use of graphic aids as ways of visualizing concepts or complex relations to enhance the learner control. The kinds of graphics suggested are those establishing linkage between the learner and the conceptual structure of text, such as, diagrams, graphs, tables, pictures, and models.

7. Adjunct questions. Chacon-Duque (1985), Holmberg (1982), and Wright and Conroy (1988) stated that adjunct questions were conceived of as highly abstract questions

placed before, into, or after a passage of text, to prompt mental elaboration. The effectiveness of such questions depends on the willingness of the student to actually think about them.

8. Repetitions and recapitulations. Marland et al. (1990) and Meacham and Evans (1989) asserted that repetitions and recapitulations could be used for stressing important ideas. This would provide cross referencing within and across units and modules to form small-scale associations of ideas and relevant summarizations of substantive content of the work already completed. These kinds of techniques facilitate the development and refinement of understanding.

9. Study directions. Meacham and Evans (1989) and Wright and Conroy (1988) maintained that study directions refers to the mechanism by which learners are guided through the cognitive structure of a segment of text so that they can become quickly oriented and can easily organize the hours and pace of a study program. Study directions included three points: how to work through the module; a list of required texts, equipment, and learning activities; and estimated time to complete the learning activities.

10. Repetitive questions. Gagné (1978) and Meacham and Evans (1989) defined repetitive questions as a series of detailed questions on each distinct part of a subject which enable learners to check that they have retained all

important facts and concepts. They are presented often as self-evaluation exercises or questionnaires. There is some evidence (Marland et al., 1984) that repetitive questions are more effective when sample answers are provided elsewhere in the book, because they help the student to focus on the critical information or skills.

11. Structured tasks. Chacon-Duque (1985), Rothkopf (1982), and Wright and Conroy (1988) claimed that structured tasks were complex activities that promote student work on significant ideas, questions, and points of view in the text. The nature and scope of the tasks should reflect the learning level of the objective to be evaluated. They may include a small research project, observations at a field site, a verbal discourse on an audiocassette, or a written essay assignment.

12. Suggested answer. Meacham and Evans (1989), Shaw and Taylor (1984), and Wright and Conroy (1988) maintained that suggested answer means a model answer which allows students to compare their responses. Skinner (1968) found that feedback provides the reinforcement needed to strengthen the correct behavior or mental pathway and establishes more precise and elaborate learning. Effective feedback depends on proper turn-around time, an appropriate form of marking, a supportive tone, and a suitable length of response.

13. Weighting workload. Marland et al. (1990) and Meacham and Evans (1989) defined weighting workload as a volume of reading material and assessment that should be carefully assigned to students. It was found (Woodley & Parlet, 1983) that the greater the workload after a certain level, the higher the likelihood of attrition and the lower the grades.

14. Variety of media. Chacon-Duque (1985) and Meacham and Evans (1989) stated that a variety of media could be defined as using other media such as audio, video, slides, and film to repeat information. A combination of audio and visual stimuli enables students to absorb information through two channels simultaneously. Bates (1982) found that there is a clear advantage to using radio and television to supplement readings, rather than readings alone. Schramm (1979) stated that students who work with a combination of media do significantly better than others who do not.

What is implied from these suggestions is that a good module has two elements: 1) understanding of logical principles, location of information, interpretation of information are facilitated; and 2) the focus in essential information.

Fourteen criteria have been identified as relating to good quality in instructional materials. In order to

enable a wider range of students to gain most benefit, instructional materials should be as clear and self-explanatory as possible. The aims of each subject should be clearly stated. Content should be carefully selected and logically developed. Confusing elements should be explained or clarified. Activities should be designed to confirm knowledge and develop understanding. Tasks and procedures should be unambiguous and easily located for reference.

Adapting the Criteria for the Use of UT

Based on the opinions and the research findings reviewed above, and considering the relevancy to the presentation of course material at UT, those 14 criteria are classified into 10 comparable evaluation criteria of UT instructional material presentation. Thus, the most relevant quality evaluation-criteria which can be drawn are the following:

1) The clarity and consistency of objectives, refers to how well the statement objective clarifies the content for the students/readers and how consistent the objective is with the content, assignment, and self-assessment.

2) The clarity of presentation of concepts and principles is comprised of advance organizers, staging devices, and repetitions and recapitulation criteria. The criteria components, therefore, relate to the provision of

introductions in the modules, the sequence of learning activities, the consistency of the structure of the unit to the introduction, and the use of content markers.

3) The use of examples and vocabulary aids to highlight key ideas encompasses advance organizers and vocabulary aids criteria. To measure this criterion, several components, such as how far the examples provided support the content and the use of margin indexes and margin notes, were utilized.

4) Accessibility to information consists of the use of adjunct questions and study directions. Therefore, the components, such the use of adjunct questions, study directions for working through the module, additional materials, and the estimated time to complete the learning activities, were used to measure this criterion.

5) Visual presentation and layout is comprised of the graphic aids criterion. Thus, the components, such as the use of pictures, charts, or diagrams in the text, the distance between lines and paragraphs, and the layout in general, were used as measurement devices.

6) Overviews and summaries relate to advance organizers, repetitions and recapitulations, and staging devices criteria. The component criteria therefore relates to how glossary indexes, overviews, and summaries facilitate the development and refinement of understanding.

7) Readability in general refers to the supported writing style criteria. The component criteria, therefore is linked to the tone or nature of the writing style, the sentences, the language, and the terminology used.

8) Practice activities consist of criteria such as repetitive questions, structure tasks, and the inclusion of suggested answers. The component criteria relates to the measurement of assignment, formative-test, self-assignment, and feedback.

9) General presentation relates to such component criteria as the density of the ideas of the text, the required time for reading, the degree of difficulties perceived, the relevancy of the material content to the students' jobs, and the scope, the depth, and the correctness of the content material.

10) Combination of media refers to the variety of media criteria. The component criteria refers to whether the support media is needed and what type of media is considered to be necessary.

These ten criteria are used as quality evaluation criteria in this study and have been used to construct the questionnaires that have been administered to students and tutors.

CHAPTER III

Methodology

There were three intentions posed in the conduct of this study. First, questionnaires were combined with interviews to ascertain UT students' and tutors' perceptions of course materials. The second purpose of this study was to determine the relationship between the course quality and student achievement. The third intention was to ascertain differences in course quality perceptions between students and tutors.

The collection of data involved students who were randomly selected from the Diploma II (D-II) Project and the Diploma II (D-II) Self-funded program in the Faculty of Education at Universitas Terbuka. Individuals who presented tutorials in both the D-II programs constituted the tutor sample. Two packages of printed learning materials of each program were chosen as the course material sample of this study. Data were analyzed through the use of both quantitative and qualitative approaches.

The following sections of the study are presented in this chapter: 1) sample 2) data collection including research instrument, and 3) data analysis.

Sample

The sample for this study is described in two parts: 1) participants, and 2) course materials.

Participants. All the Diploma II students who enrolled in 1992 for the course material sample became the population of this study. Students of the D-II Project were represented by the students who enrolled for that course material in Jakarta. Students of the D-II Self-funded program were represented by those who enrolled for that course material in Bandung.

Tutors who gave tutorials of the course material sample to students of both the D-II Project in Jakarta and the D-II Self-funded program in Bandung were also involved in this study. The tutors in the D-II Project represented the study center tutors and those in the D-II Self-funded program represented regional center tutors.

According to previous research results (Djalil et al., 1992) the two D-II programs used different systems in tutorials; the D-II Project used discussion methods, whereas the D-II Self-funded program used a lecture-centered method. Since there were only four tutors of the D-II Self-funded program in the sample area in Bandung who presented the course material sample, eight tutors from other subdistricts in Bandung who conducted a similar presentation system in tutorials were also involved in this study. Thus the tutor sample in the D-II Self-funded was identical in size to the tutor sample in the D-II Project, that is , 12 tutors for each group.

The selection of Jakarta and Bandung as the sampling areas was based on the large number of students in these areas. Besides, the D-II Self-funded students who enrolled for the course material sample could only be found in Bandung since the pilot project for this study program was held in that city.

The students who attended tutorials in UT's guided territory in Jakarta and the students who attended tutorials in Andir subdistrict in Bandung became the sample of this study. Each tutorial area was comprised of six tutorial groups. The six groups in Jakarta were group I, II, III, IV, V, and VI in the Pondok Cabe, Pondok Benda, and Ciputat subdistrict areas. The six groups in Bandung were group A, B, C, D, E, and F in the Andir subdistrict area. Each group consisted of about 30 students. The division of tutorial groups was based on administrative requirements related to the ease of conducting tutorials.

Course material sample. Diversity and comparability factors were taken into consideration for the selection of the course material sample. Two sets of course materials were randomly selected from two different compulsory subject areas: Social Science Education 2 (PPDG2432), learning material for a five-credit course, and Mathematics Education 3 (PPDG2431), learning material for a three-credit course. The Social Science Education 2 was

considered to represent social studies and the Mathematics Education 3 was considered to represent natural science studies.

In addition, both courses included tutorials. For each course, eight tutorial presentations were provided in a semester to discuss all the learning materials. Obviously, the course material sample was used as learning and teaching resources for both students and tutors.

The course sample was taken by the D-II students attending the fourth semester of the six semesters in the study program. It was assumed that the students would be familiar with instructional material delivered by distance education. Therefore, it could be anticipated that the students' perceptions of course quality were not influenced by any difficulties in adjusting to this system.

Ideally, the evaluation of course material should begin before the course is written and certainly before it is distributed to students (Meacham & Evans, 1989). The course sample in this study was a relatively new release at UT since it was published and put into use in 1991.

The learning materials that were evaluated by students were the parts of the material or the module which was being studied by them. In other words, the evaluation of course material was based on the students' learning from the material during actual study sessions. Thus, the

module number being evaluated by the students depended on their pace in studying the material. Therefore, the information of evaluation gathered was based on straight experience and the students' progress in studying the modules could be identified.

Additionally, the Social Science and Mathematics course materials from both the D-II Project and the D-II Self-funded were selected as the course material sample for comparative purposes due to their different performance characteristics.

The characteristics of the course materials. As stated earlier, a package of course material consists of 9 - 15 modules depending on the credits of the course. Since the Social Science course is a five-credit course, the course material consists of 15 modules, i.e, module 1 to module 8 in the first book and module 9 to module 15 in the second book. Thus, the package of Social Science course material consists of two books. The Mathematics course material consists of 9 modules, because it is a three-credit course. Module 1 to module 5 are in the first book, and module 6 to module 9 are in the second book.

Even though it was not completed by an overview chart, a course overview was placed in the first part of the whole package of course materials. For the Mathematics course material, the course overview was included in module 1,

whereas for the Social Science course material the overview was provided in separate pages, before module 1.

Each module was written by a different course writer. Even though every module presented a different topic of course content, the pattern of the material presentation was the same. The presentation pattern of one module consisted of an introduction, objective statements, the description of the content, exercises, summaries, and a formative-test.

Every module gave an introduction which was followed by the statement of objectives, either in general or in specific terms. The general instructional objectives were written in one long sentence, whereas the specific instructional objectives were identified in numerical-order statements. The general and specific instructional objectives were derived from UT's Basic Course Outline.

The content description of each module was divided into 3 or 4 learning units. Several learning units gave a brief overview. Information in every learning unit was sequenced into several segments. Several modules used questions which were placed before, into, or after a passage of text. Various headings, boldface type, and italics were used to emphasize the important concepts and ideas. Several examples, analogies, and general discussions were given in the content description.

Pictures, tables, or charts were also presented in the modules.

There were study directions which dealt with how to work through the exercises, formative-tests, and self-assignments. These directions provided guides on how to accomplish those practice activities. The formative-test of every learning unit consisted of 10 test items for the Social Studies course material and 5 test items for the Mathematics course. A description of the correct answer was placed in the end section of the course material.

Feedback was given in the form of marking which showed the students what their formative-test results indicated about their level of mastery learning. Feedback was also followed by an advance-action suggestion to make improvement.

Although there was no list of required texts provided for either course material, there was a list of the textbooks used by course writers. Some of the textbooks were marked by *, *), or (*) - an asterisk or/and a parenthesis - but the meaning of the symbol was not explained. In UT's Terms of Reference for the Development of the Modules (Suparman, 1988), however, it was stated that the symbol "*)" indicated that the textbook was the important reference. There was no other symbol discussed.

The volume of reading material and assessments

assigned to students were designed to be appropriate for the number of credits given to each course. One course credit required students to spend 40 hours to learn the course material. Thus, the 5 credit Social Science course, for example, required 200 hours to learn, and the 3 credit Mathematics course required 120 hours to learn.

Since the instructional objectives were derived from the Basic Course Outline, the course material was also designed to facilitate students in acquiring both basic learning skills and the special knowledge they will require to develop professional competency in their jobs as elementary school teachers.

The course material sample in the D-II Project used additional media such as audio-cassettes as support materials. A set of audio-cassettes was distributed to the tutorial groups in the three subdistrict areas. The cassettes can be used by each tutorial group in turn, and sometimes the content was broadcast on the radio. This kind of supported media was not available for the course material sample in the D-II Self-funded program.

The characteristics of the performance of course materials. The performance of the course materials used in the D-II Project was different from that of the course material used in the D-II Self-funded program. The D-II Project course materials used a larger page size, better quality of paper,

and larger size of print than those of the D-II Self-funded course materials. The differences between these two course materials are described as follows:

1. The course material performance for D-II Project. This material was "quarto" size (21 x 33.25 x 1.75 and 1.50 cm) and printed on white paper. The font of the print was of normal size. The quality and clarity of print and pictures were good. The distance between sentence lines (spaces) was relatively large (double-spacing). The presentation of course material began with an overview section, followed by a list of contents, a description of each module, a description of answer keys, a bibliography for all modules, and a glossary of technological terms.

2. The course material performance for D-II Self-funded program. The print material was of a smaller page size (14.50 x 20.20 x 2.00 and 1.50 cm). The printing was done on 100% recycled printing paper. The letter of the print was relatively small compared to the D-II Project course material. The distance between lines (spaces) of the Mathematics course material was double-spacing, although that of the Social Science course material was single-spaced. The print for both course materials was clear but most of the pictures presented were not clear. The D-II Self-funded course material was preceded by a list of content, a glossary of technological terms, a description

of each module, a description of answer keys, and a bibliography. Thus, the provision of a glossary was not in the end section as in the course material of the D-II Project, but in the front after the list of contents.

The performance characteritics of the course materials of the two Diploma II programs were different, but the written contents were exactly the same.

Data Collection

In June 1992, data were collected through the use of questionnaires and interviews.

Questionnaire sample. Questionnaires were utilized in order to assess the level of agreement of respondents regarding various components of course material quality (Copy in Appendix E). The questionnaire was developed through several stages of modification and refinement.

The first stage consisted of the delineation of the data which were being sought in order to satisfy the research questions. It was recognized that questionnaire responses must supply information regarding personal levels of agreement associated with various components of quality of course material.

Items for questionnaire. The questions were derived from the ten quality criteria discussed in Chapter II which included the clarity and consistency of objectives, the clarity of concepts and principles, the use of examples,

accessibility to information, visual presentation and layout, overviews and summaries, readability in general, practice activities, general presentation, and combination of media.

Using derivations of the ten quality criteria, 47 specific components of quality of course material and 4 components associated with the module development were identified.

From the four module development components, two components (the use of margin indexes and the use of margin notes) were descended from the use of examples and vocabulary aids criterion. One component (the use of glossary indexes) was derived from the overviews and summaries criterion, and the other component (the two columns text presentation) was derived from the visual presentation criterion.

Since these four components could not be applied to evaluate modules, the questions were planned to elaborate the respondents' views relating to those components.

Each of the ten quality criteria consists of three to eight statements which were judged by respondents using a Likert rating scale from 1 to 5 to indicate the degree of agreement or disagreement. The perception of course quality refers to the scores on the quality criteria. The highest score for one criterion is 5, and

the lowest score is 1. A larger number indicates more positive course perceptions.

These statements were followed by open-ended questions which were intended to collect students' suggestions or comments which might be useful for enriching data. The questionnaire was also used as the interview guide.

Pilot testing. The order of question presentation was based on the order of the quality criteria. Since the questions of perceptions related to module evaluation and module development, the questionnaire was divided into two parts: A) module evaluation which consisted of 47 questions; and B) module development which consisted of 4 questions. Therefore, the questionnaire consisted of 51 questions. In order to ensure clarity, the specific terms used in the questionnaire were explained by giving definitions and examples.

The draft questionnaire was circulated amongst colleagues at the University of Victoria (UVic) and the Universitas Terbuka (UT). The colleagues at UVic were eight UT academic staff who were studying for master's degrees at the university. They gave some comments and suggestions linked to the translation of the questions from English into Indonesian language.

The colleagues at UT were the Coordinator of course material development, the Head of the Research Center, and

five academic staff who were responsible for editing course materials. They gave some comments and suggestions related to sentences and terms used in the questions and the addition of question items.

A redraft version was pilot tested on 6 students in group III of the D-II Project in Jakarta. The pilot testing was intended to appraise vocabulary, language level, respondents' understanding of questions, and respondents' reactions to the interviews.

On the basis of the pilot results, unclear terms, sentences, and questions were defined and reworded. To attain a better response rate and complete data for the open questions, a note declaring the provision of a prizes, (T-shirts from Victoria, Canada, for respondents who returned complete questionnaires promptly) was inserted in the letter of introduction. For the same reason, the introduction letter was signed by the Head of the Research Center of Universitas Terbuka. To obtain further comment, the questionnaire was then circulated amongst colleagues at UT: the Head of the Research Center, and three academic staff who were responsible for editing course materials.

After this last step was completed, the second draft version was pilot tested on 20 students in group V of the D-II project. This pilot test was used to examine the internal reliability of the instrument: to estimate the

homogenous nature of responses of instrument by using Cronbach's coefficient Alpha. Cronbach's coefficient Alpha (α) can be used when items are not scored dichotomously; for example, items that have several possible answers, each of which is given a different weight (Borg & Gall, 1989). The internal reliability coefficient .77 was calculated for the total test. The level of reliability of the instrument was considered to be acceptable in the sense that, as stated by Gay (1979), the attitude scale reliabilities ranged from .60 to .90, with most being in the .70 to .80 range.

Final items. Ambiguous questions in the subtests, which had low reliabilities, were rewritten, and one item was deleted. The questionnaire was reviewed by the UT colleagues again. Final revisions were made before data collection was commenced. The completed questionnaire and the accompanying letter of introduction is given in Appendix E.

Questionnaire administration. A total of three hundred questionnaires were distributed to students both in the D-II Project - Jakarta and in the D-II Self-funded program - Bandung. One hundred and fifty questionnares were randomly distributed to six student groups in the D-II Project and the other 150 questionnaires to six student groups in the D-II Self-funded program. This number of

questionnaires was used in anticipation of a 60% response rate, which would provide for 45 respondents from each course material sample of each study program. The response rates for the D-II Project and the D-II Self-funded were 105 and 116 returned questionnaires respectively, providing response rates of 70% and 77%.

Twelve questionnaries were randomly distributed to tutors in each of the D-II study programs. The returned questionnaires numbered 23, a response rate of 96%. The increase of the response rates of both students and tutors might be attributed to the method of questionnaire administration used in this study.

In order to incorporate the increase in the return return rate, considerable effort was made to have the questionnaires completed and then retrieved. Prior to the distribution of the questionnaires, advance contacts were made to the tutors and the tutor coordinator in each group. Contacts were made to explain the intention of this study and to arrange the appropriate time to distribute the questionnaires in the places where tutorials were held.

The questionnaires were distributed to students and tutors in six tutorial groups, both the groups in Jakarta and those in Bandung, in each tutorial location.

For each area, either in Jakarta or in Bandung, three groups of students, including six tutors, were assigned to

evaluate the Social Science course material, and the other three groups, plus the other six tutors, were set to evaluate the Mathematics course material.

Questionnaire recipients were advised that the completed questionnaire would be retrieved a week later. In the case of questionnaires which were not completed, a call to respondents, usually through tutors, was made to check for any problems they might have had in completing the questionnaires.

After 2 weeks, another call was made to participants who had not returned the questionnaires, resulting in the return of several more. Students who failed to return the questionnaires did so for two main reasons: some students never attended tutorials and the others had no time to participate during a hectic time of the school year and the examination session in the elementary schools.

Interview. The interview was intended to obtain more data and greater clarity. Thus, it provided a desirable combination of objectivity and depth and permitted the gathering of valuable data. Results of interviews were also used for comparison with the sample answers received from mailed questionnaires.

Interviews were conducted utilizing two students representing the high and the low performance students of each group within the tutorial groups. The D-II Project

student group consisted of 12 representatives from group I, II, III, IV, V, and VI. The D-II Self-funded student group consisted 12 representatives from group A, B, C, D, E, and F.

Students were interviewed regarding the questions in the questionnaires. They were asked to elaborate their comments and suggestions related to the quality of course material. Different interview schedules were utilized with each of the two groups of respondents. Mostly the interviews were held on the same day as the questionnaire distribution time, e.g., after the questionnaires had been distributed to other students in the tutorial locations. Every fourth student was interviewed with each interview lasting about an hour. A total of six interviews was conducted. Interviewers involved in this study were the investigator and two academic staff who were involved in the development of questionnaires.

One tutor coordinator and two tutors of each D-II group, the D-II Project and the D-II Self-funded program, were interviewed as well. The questionnaire was used as the interview guide. Tutor responses to the questions in the questionnaire were then followed up with requests for clarification and elaboration in the open-ended questions.

The tutor coordinators were also asked questions related to the tutorial schedules, the course material

presentation system, and the tutorial processes. There was a need for more information about tutorials in order to clarify how the tutorial system related to students' perceptions of course quality.

Data analysis

The data gathered were edited to check for, completeness and relevance of the participants' answers to the questions. The data, then, were coded according to the ten quality criteria to allow for analyzing and storing of the data.

Some students completed only part of the questionnaire resulting in missing data for several questions. There were 15 people who omitted several questions totally of 82 items. All of these omitted items were left out of single area of questions, e.g., the questions in the use of examples and the module development criteria. These kinds of non-random missing values were assumed to affect the generalizability of results (Tabachnick & Fidel, 1989). Therefore, for missing data, the mean of its variable was inserted. The t-test analysis results indicated that there was no difference between the two groups, missing and non missing values groups.

Several different types of analysis were utilized to explore the research questions. Interview responses were analyzed through the use of subjective techniques of

analysis. Thus, the responses were analyzed in relation to the comments and suggestions for each of the ten quality criteria. Questionnaire data were analyzed through the use of various statistical procedures and computerized analysis.

Statistical analysis. Statistical analysis of course material quality focused upon 10 quality criteria. These included the clarity and consistency of objectives, the clarity of presentation of concepts and principles, the use of examples and vocabulary aids, accessibility to information, visual presentation and layout, overviews and summaries, readability in general, practice activities, general presentation, and combination of media. These criteria were considered to be the key variables in the quality of course materials.

Three methods of statistical analysis, consisting of descriptive statistics, t-test, and Pearson Product Moment correlation, were utilized to evaluate the questionnaire data and to satisfy the three research questions. These methods were drawn from the Statistical Package for the Social Science (SPSS). (See Norusis 1990). For all of the statistical analyses, $p \leq .05$ was used as the significance level.

The first method of data analysis consisted of the descriptive statistics: the use of percentage and

frequency distribution, such as means and standard deviations to present the characteristics of population and the respondents' perceptions of course quality. The percentage of data indicating agreement and disagreement, in relation to the Likert scale, of course quality were recorded. The mean perception scores of students and tutors, both in the D-II Project and in the D-II Self-funded program, were elaborated as a preparation for conducting further analysis to examine the differences which occurred.

In order to ascertain differences in perceptions between students and differences between tutors, data were analyzed by using t-test. The t-test analysis, separate variance estimate, and pooled variance estimate were used to test the students' differences in perceptions of course material quality because the number of the sample for each student group sample, which was chosen randomly, was more than 30 people. The t-test analysis assumed that the distribution of data is normal and homogeneous and the score variances for the populations under study are equal.

Since the t-test is a more powerful analysis tool than any other analysis to test the differences between two means (Borg & Gall, 1989), the t-test was also utilized to analyze the differences in tutors' perceptions of course material quality. The number of the tutors sample was

small (between 5 and 6 persons for each group).

The small number in the sample would leave some concerns about the distributions in the data. Therefore, to analyze the perceptions of the tutor group, both a t-test and non-parametric (Mann Whitney U) test, were used. Since both tests yielded the same results consistently, only the results of the t-test were reported.

Pearson correlation was utilized to test whether or not an association existed between quality criteria. The Pearson correlation was also used to see whether or not an association existed between various students' perceptions of course quality and their achievement levels. Students' perceptions were utilized as independent variables and their achievement levels were utilized as dependent variables. Correlation coefficients were interpreted for both directions (positive and negative). Because some students did not attach their names to the questionnaires, for this correlation analysis, only 202 students were involved.

Analysis for interview data. Interview responses were analyzed by noting frequencies of responses mentioned by respondents. Responses were recorded in relation to the comments and suggestions for each of the ten quality criteria. Responses were divided into more specific responses as concerns and issues within the student and

tutor groups became evident. The interview responses were analyzed as a supplement to the questionnaire data. Examining the interview results helped to clarify or verify questionnaire results.

Thus, from the preceeding methods of statistical analysis and analysis of the interview data, conclusions regarding the three research questions, as well as data perception for course material development, were drawn.

It should be noted that in this study a problem associated with data collection on perception is the small size of the tutor sample. As stated before, the tutorial system conducted in the D-II Project program is different from that in the D-II Self-funded program. Thus, the tutors involved in this study were only the tutors who gave tutorials to the student sample and some tutors who conducted similar tutorials for course material. For this reason, statistical comparison of a sample of tutors with small populations with a sample of students with large populations is not possible. The nature of their differences in general, however, was described.

The internal reliability was again conducted on the sample after all the questionnaires were returned. The total test reliability was .91 with eight subtest reliabilities being satisfactory (> .60) and there were low subtest reliabilities for the other three subtests (the use

of example, the visual presentation, and the module development) e.g., .58, .47, and .59 respectively.

The low internal reliabilities for these subtests are likely the result of two factors; first, the small number of the items or components in each subtest (only 4 components) and second, the nature of the data (responses) for the three subtests.

Factors contributing to the low reliabilities for the two subtests (the use of examples and visual presentation) could be the result of the differences of response in answering questions because the students focused on different modules. Factors which contributed to the low reliability for the third subtest (module development) could be the result of the fact that interest was focused generally on three ways for improvement of module presentation with little interest shown for the fourth way.

CHAPTER IV

Perceptions of Course Quality

In addition to a description of the characteristics of the tutorial conducted by each group and the characteristics of the population of this study, an evaluation of the perceptions of course quality and the differences between students and between tutors in the D-II Project and the D-II Self-funded program is presented in this chapter. These data are examined focusing on the selected quality criteria of course material as outlined in Chapter II and the course development as course development criterion.

The Tutorial Characteristics

A description of the two tutorials involving D-II Project students and the D-II Self-funded students are presented. Each description consists of a brief explanation of the frequency, the length of time, the number of students, the course material presentation system, and the tutorial process.

The tutorial in the D-II Project program. The number of students involved in each tutorial group ranged between 24 - 29 students. Each course was presented as a tutorial once a week continuously, thus there were eight tutorials presented in one semester. Each tutorial presentation was comprised of at least two modules for the Social Science

course and one module for the Mathematics course. Each tutorial lasted about one hour, and was held at one o'clock in the afternoon, after the students who were full time teachers in public elementary schools finished their teaching in the schools. The tutorials were conducted at the schools close to the main Universitas Terbuka (UT) campus at Pondok Cabe, Jakarta.

In the process of the tutorial, tutors encouraged students to raise questions about the difficult parts in the modules. These questions were then discussed by involving all students in the class in an effort to find solutions. The tutor directed the discussion, evaluated alternative solutions, and summarized the necessary points. Thus, in the D-II Project, the tutorial presentation served to develop the system of discussion.

The tutorial in the D-II Self-funded program. Approximately 22 - 30 students were involved in each tutorial group. For each course, tutorials were presented on two consecutive days in the first week of June, and two consecutive days in the third week of the same month. Thus, in this D-II program there were only four tutorials presented in one semester. The tutorials were also held in the afternoon after the teachers had finished their teaching in the elementary schools. Each tutorial presentation was comprised of explanations of either two or

four modules and each lasted about two hours.

Tutorials began with a discussion of the questions raised by students, but mostly the tutorial processes were dominated by the explanations of the tutors about the main ideas of the modules. Thus, the lecture mode of instruction dominated in these tutorials.

According to the tutors, this tutor-centered method was developed because most students did not prepare themselves for the tutorials, so the students did not raise many questions in class. This method actually was not consistent with the tutorial system as suggested by UT. UT recommended that the tutorials emphasize the use of discussion methods, so that the students who were elementary school teachers would be able to apply these methods in their teaching.

It is clear that the two D-II study programs developed very different systems in tutorials. The D-II Project program developed discussion methods, whereas the Self-funded program developed a tutor-centered method.

Population Characteristics

The student sample was predominately female. As can be seen in Table 1, females made up 71% of all students, which males constituted 29% of the total number of students sampled.

Table 1

Sex Profile of Sample Population

	Student				Tutor			
Program	Project		Self-funded		Project		Self-funded	
Sex	Fre	%	Fre	%	Fre	%	Fre	%
Male	53	50.5	5	4.5	8	72.7	11	91.7
Female	52	49.5	111	95.5	3	28.3	1	8.3
Total	105	100.0	116	100.0	11	100.0	12	100.0

In the D-II Project, the percentage of male students (57%) was slightly larger than the percentage of female students (43%). In the D-II Self-funded program, which served students in the cities, however, the subject sample was predominately female, with females making up 96% of the student population and males, 4%. Thus, the D-II Self-funded group had greater percentages of females and lower percentages of males. This finding supported the previous research results which showed that, in the cities, female school teachers predominate, whereas in remote areas male school teachers predominate (Djalil et al., 1992).

The data in Table 1 showed that the tutor sample was dominated by males in both the D-II Project and the D-II Self-funded program, with males making up 82% of all tutors, and females, 18%.

As described in Chapter III, students were assigned to evaluate only the module which was being studied by them.

All of the respondents stated that they had read the module before they evaluated it. With these statements, it is anticipated that they were actually involved with the module which was being evaluated. Therefore, their perceptions can be assumed to be based on direct experience.

Since this study was conducted in the fifth week of the eight-week tutorial provided in the semester, it was assumed that the students were studying at least module 5 for the Mathematics course (consisted of 9 modules) and module 10 for the Social Science course (consisted of 15 modules). In fact, the data revealed that there was a range of 9 modules being studied for each course (Table 2). They included module 1 to module 9.

Based on the number of the modules being evaluated by students and tutors, their progress in studying or reading the modules can be inferred.

For the Social Science course material, there were three modules: module 2, 4, and 5 which were being studied by most of the students in the D-II Project (Table 2). Few students studied modules 7, 8, and 9, and no one studied above module 9. Most tutors in this study program evaluated modules 4 to 6, the modules which were being presented as tutorials when this study was conducted.

Table 2

The Module Number Read by Sample

Program	Student		Tutor	
	Project	Self-funded	Project	Self-funded
Module number	Absolute frequency	Absolute frequency	Absolute frequency	Absolute frequency
Social Sc.:				
Module 1	2	15	-	-
Module 2	10	7	-	-
Module 3	4	1	-	-
Module 4	13	1	4	1
Module 5	20	14	1	1
Module 6	8	8	1	2
Module 7	2	-	-	-
Module 8	1	9	-	-
Module 9	1	6	-	2
Total	61	61	6	6
Mathematics:				
Module 1	12	13	-	-
Module 2	1	2	-	1
Module 3	8	-	2	-
Module 4	7	8	1	1
Module 5	13	8	1	1
Module 6	2	8	1	3
Module 7	1	2	-	-
Module 8	-	12	-	-
Module 9	-	2	-	-
Total	44	55	5	6

Therefore, the modules which were read by most students of the D-II Project were the same as the modules being presented in the tutorials.

A number of students in the D-II Self-funded program were studying two modules: module 1 and module 5. Many students who evaluated module 1 stated that they had just

started reading the course material, even though, at that time, the tutorials had been based on the materials in module 6 to module 8 of the Social Science course material. Most students of the D-II Self-funded program had not previously studied the modules being discussed in tutorials (see Table 2). There were two tutors who evaluated module 9, the other four tutors in the D-II Self-funded program evaluated modules 4 to 6. One tutor who evaluated module 4 stated that he evaluated the module because it needed more attention in the content description, especially in the clarification of difficult points. Since the tutorials presented only a range of four modules, module 4 to module 8, it is clear that the tutorials in both D-II programs presented modules which were below the module number that was scheduled (e.g., module 10).

For Mathematics course material, there were two modules: modules 1 and 5 which were being studied by a number of students in the D-II Project (Table 2). Few students studied module 2 and module 7, and no one studied module 8 or module 9. At the time that the study was conducted, modules 3 to 5 were been being presented as tutorials. Thus, the data in Table 2 revealed that many students of the D-II Project had read the modules which were discussed in tutorials. The tutors evaluated modules 3 to 6, the modules which were discussed in tutorials.

A number of students in the D-II Self-funded program were studying one module: module 1 (Table 2). As with the students of this study program who evaluated Social Science course material, many students who evaluated module 1 of the Mathematics course also stated that they had just begun reading the module, although at that time, modules 6, 7, and 8 of the Mathematics course material were being presented in tutorials. By examining Table 2, it can be seen that many of the students of the D-II Self-funded program had not prepared themselves for the tutorials by studying the modules being discussed on those occasions. It can also be inferred that tutors in the D-II Self-funded program presented modules which were beyond what was scheduled (e.g., module 5).

There was one tutor who evaluated module 2, and the other five tutors evaluated modules 4 to 6. Some tutors in this study program obviously evaluated modules which were different from those they presented in tutorials (modules 6, 7, 8). The tutor who evaluated module 2 and the other one who evaluated module 5 stated that they evaluated those modules because the modules needed more attention in content description, especially in clarification of difficult points and in the adequacy of the explanations and examples of the application of knowledge.

Analysis of Perceptions Associated with Quality of Course Materials and Differences in Perceived Agreement

In this section, the perceived level of agreement by students about course material which was associated with the ten quality criteria and their components, as well as the degree of variation in perceptions between students and tutors in the D-II Project and the D-II Self-funded program, is analyzed.

Respondents' perceptions of the quality criteria of the course material as a whole unit, regardless of the module number that they had read, is the focus of this analysis. The reason that the data can be aggregated is that the evaluation criteria are common across modules. The only differences between the modules are the topics covered, which are investigated in general. Thus, for the purpose of this evaluation, the data across modules were pooled and treated as a single sample. The results of the analysis on the individual criteria component (item) is discussed when the level of agreement is low and/or when there are variations on perceptions on that particular component between the student and tutor groups.

Each of the ten quality evaluation-criteria and one development criteria for course materials is analyzed and data are presented regarding variables which were statistically significant. The results of the frequency

distribution analysis of quality criteria perceptions are reported in the Tables 3, 5, 7, and 9. The more detailed results, the t-test analysis of the perceptions of the quality criteria, are in the Tables 4, 6, 8, and 10. The t-test analysis results for criteria components (items), are in Appendix A to D.

The Social Science course.

The clarity and consistency of objectives. Each sample group expressed a high level of agreement with the clarity and consistency of the objectives stated in the modules. As illustrated in Table 3, about 93% of the respondents in the D-II Project and 100% of the respondents in the D-II Self-funded program agree and strongly agree with the appropriateness of the statement of the objectives in terms of clarity and consistency. The t-test analysis indicated a statistically significant difference in perception between the two groups (Table 4). The D-II Self-funded students gave more positive agreement (mean score = 4.32) with the clarity and consistency of objective statements in the modules than did the students in the D-II Project (mean score = 4.06).

In addition to their agreement with the clarity of objective statements, the respondents who evaluated module 1 suggested a simpler and more specific description of objectives. Some students proposed that course materials

Table 3

Students' Perceptions of Social Science Course Quality

Program	Project N = 61					Self-funded N = 61				
	Percentage of sample					Percentage of sample				
Criteria	SD	D	LA	A	SA	SD	D	LA	A	SA
Objectives	-	-	8	67	25	-	-	-	62	38
Concepts	-	-	7	80	13	-	-	2	69	29
Examples	-	-	5	75	20	-	-	-	67	33
Information	-	13	23	61	3	-	3	3	81	13
Visual	-	6	15	74	5	-	3	23	64	10
Summary	-	-	16	57	27	-	-	-	74	26
Readability	-	2	5	86	7	-	-	-	74	26
Practice	-	-	10	72	18	-	-	2	78	20
General	-	13	43	44	-	-	19	28	51	2
Combination	-	3	5	61	31	-	-	10	74	16
Development	-	-	10	77	13	-	-	15	62	23

Note: SD = Strongly Disagree
D = Disagree
LA = Less Agree
A = Agree
SA = Strongly Agree

Table 4

t-Test Analysis of Quality Perceptions on Modules of Social Science by Student Group and Criteria

Criteria	Mean score		t-value
	Project group	Self-funded group	
Objectives	4.06	4.32	-3.19*
Concepts	4.13	4.32	-2.55*
Examples	4.04	4.20	-2.34*
Information	3.55	4.04	-4.39*
Visual	3.79	3.72	.56
Summary	3.97	4.25	-3.28*
Readability	3.86	4.14	-3.95*
Practice	4.04	4.16	-1.59
General	3.15	3.23	-.63
Combination	4.22	4.06	1.56
Development	3.93	4.02	-1.11

df = 120 * : $p \leq .05$

Table 5

Tutors' Perceptions of Social Science Course Quality

Program	Project N = 6					Self-funded N = 6				
	Percentage of sample					Percentage of sample				
Criteria	SD	D	LA	A	SA	SD	D	LA	A	SA
Objectives	-	17	-	67	16	-	-	-	83	17
Concepts	-	-	33	67	-	-	-	-	67	33
Examples	-	-	50	33	17	-	-	17	66	17
Information	-	-	50	50	-	-	17	17	66	-
Visual	-	-	-	67	33	-	33	-	50	17
Summary	-	-	17	66	17	-	17	-	33	50
Readability	-	-	17	66	17	-	-	17	66	17
Practice	-	-	-	100	-	-	-	-	83	17
General	-	50	-	50	-	-	-	-	100	-
Combination	-	-	-	67	33	-	-	-	83	17
Development	-	-	-	33	67	-	-	-	83	17

Note: SD = Strongly Disagree; A = Agree
D = Disagree; SA = Strongly Agree
LA = Less Agree

Table 6

t-Test Analysis of Quality Perceptions on Modules of Social Science by Tutor Group and Criteria

Criteria	Mean score: Project group	Mean score: Self-funded group	t-value
Objectives	3.67	4.21	-1.38
Concepts	3.90	4.30	-1.56
Examples	3.67	3.92	-.63
Information	3.40	3.47	-.18
Visual	4.25	3.46	1.47
Summary	3.71	3.96	-.52
Readability	3.36	3.97	-.33
Practice	4.02	4.19	-.98
General	3.00	3.96	-2.61*
Combination	4.28	4.22	.23
Development	4.33	3.96	1.45

df = 10 * : $p \leq .05$

include headings, either for the general objectives or the specific objectives, before presentation of the explanation. They believed it would be helpful in retention of ideas. The students who evaluated module 6 stated that they did not find any of the general objectives stated in the module, only the specific objectives.

Over 80% of the tutors in the D-II Project and 100% of those in the D-II Self-funded program showed agreement with the clarity and consistency of the statement of objectives in the modules (Table 5). The statistical analysis resulted in a lack of significant difference in perception between the D-II Project and the D-II Self-funded groups (Table 6). In other words, both tutor groups had the same positive perceptions about the objective statements.

There was a comment, however, that the objectives of module 1 were not complete. The objectives of studying economics were not stated, whereas information about the topic was found in the text description.

The clarity of presentation of concepts and principles. Within each of the sample groups, over 90% of respondents also showed a high level of agreement with the clarity of concepts and principles presented in the modules (Table 3). The t-test revealed a significant difference in perception between these two groups (Table 4). The D-II Self-funded group asserted a higher level of agreement (mean score =

4.32) than that shown by the D-II Project students (mean score = 4.13).

Additionally, students of the D-II Project suggested the underlining of key terms in sentences to add emphasis and to aid information retrieval. They stated that the use of italics, as in the module, was not very clear.

All tutors in the D-II Self-funded program revealed high agreement with the clarity of concepts and principles presented in the modules (Table 5). About 33% of the tutors in the D-II Project, however, expressed low level agreement, whereas the other 67% of respondents expressed agreement. There was no significant difference in perception between these two groups (Table 6).

The use of examples and vocabulary aids. Agreement with the appropriateness of the use of examples and vocabulary aids to highlight the key ideas in the modules was shown to be high in the two groups of students. The agreement was shown by 95% of the respondents in the D-II Project and 100% of the respondents in the D-II Self-funded program (Table 3). Similarities in perceptions are likely attributable to the use of examples and vocabulary aids which results in a lack of a significant difference between groups.

Even though students showed a high level of agreement with the use of the examples given, they proposed that more

examples be provided in the module in order to improve clarification of content.

A student who evaluated module 5 stated that the number of examples in the description about Monopoly Market was not completely given. Previously, it was stated that there were five examples which would be given, but in the following description, there were only four examples presented.

Agreement with the appropriateness of the use of examples and vocabulary aids presented in the modules was shown by over 83% of the tutors in the D-II Self-funded program, but only 50% of the tutors in the D-II Project showed agreement (Table 5). However, there was no significant difference in perception between the two groups (Table 6).

Tutors claimed that the learning material presented a lot of theories but few examples. This comment was given by the tutors in the D-II Project who evaluated module 4.

Accessibility to information. Perceived agreement with the use of adjunct questions, study directions, and additional materials to help learners to access information on text differed significantly for each group of students (Table 3 & Table 4). Over 94% of the students in the D-II Self-funded revealed agreement. In the D-II Project, only 64% of the respondents showed agreement, 23% of respondents

showed less agreement, and 13% of the respondents showed disagreement. A higher level of agreement occurred with the D-II Self-funded students (mean score = 4.04) when compared to that of the students in the D-II Project (mean score = 3.55).

Low level of agreement with item 44 was expressed by the two groups of students (mean score = 2.51 for the D-II Project group and mean score = 3.31 for the D-II Self-funded group). (See Appendix A). Item 44 was the criterion component related to accessibility to additional supported materials.

The students stated that they faced difficulties in obtaining additional support materials. It should be recognized that there were no suggested additional materials listed in the course material, except for the bibliography for each module which is placed at the end of the course material book. The students, however, considered that any additional materials would enrich their understanding of the modules.

Students expressed several reasons for the difficulties they experienced in obtaining the additional materials, such as a lack of time, no obligation to read these materials, and not enough money to buy these materials.

Actually, some of the textbooks listed in the

bibliography were marked by * and *), but the meaning of the symbols was not explained. As stated in Chapter III, the symbol: *), as a matter of fact, indicated that the textbook was the important reference. The results of the lack of explanation of the symbols might be that students did not know that there were some important references which could be used as supported additional materials in studying the course materials. Most of the students, however, proposed that the additional materials should be listed at the end of a module, along with an explanation of where they can borrow or buy these materials.

Both tutor groups expressed relatively low level agreement with the accessibility to information; 50% of the tutors in the D-II Project and 33% of those in the D-II Self-funded program indicated either disagreement or less agreement (Table 5). The results of the t-test analysis indicated a lack of a statistically significant difference in their perceptions.

As did the students, the tutors suggested that a list of the required additional materials be included in the module to enrich students' knowledge. Since the content of the course material itself was limited, tutors assumed that the additional materials would broaden students' knowledge.

On the other hand, there was a comment which stated pessimistically that students may not need additional

materials because the course material itself was too much.

Visual presentation and layout. About 79% of students in the D-II Project and 74% of those in the D-II Self-funded program expressed either agreement or strong agreement with the usefulness of the visual presentation and layout in the modules (Table 3). The perceived agreement was relatively similar in both groups, resulting in a lack of a statistically significant difference between groups.

The two student groups revealed low level agreement on item 51, the component affiliated with the sufficiency of the graphic aids presented in the modules. This item had a mean score of agreement = 3.28 for the D-II Project and a mean score = 3.07 for the D-II Self-funded group (Appendix A).

In their comments, students proposed the presentation of tables, charts, diagrams, and pictures to help them to link to the conceptual structure of the text. The students in the D-II Project added that, in general, the text presentation was too dense and the book was too thick. They suggested a more concise and interesting presentation.

A statistically significant difference in perception was found between the two groups on item 53, the component linked to the distance between lines and paragraphs (Appendix A). Students in the D-II Self-funded program

expressed lower level agreement (mean score = 3.43) on this component when compared to the students in the D-II Project (mean score = 4.13).

The D-II Self-funded students were concerned about the small size of the letters used which, in turn, resulted in a short distance between lines and between paragraphs. They proposed a larger print to improve readability.

There were four students who proposed a better quality of book binding which would minimize the chance that the books would fall apart, as happens with the present modules. As with the students, the investigator also found that two course material samples in the D-II Self-funded program disintegrated easily. Several pages of the book easily came off when it was used.

Students in both the D-II Project and those in the D-II Self-funded program who evaluated module 5 affirmed that there was no graphic aid presented in module 5.

High level agreement associated with the usefulness of the visual presentation and layout in the modules occurred in the D-II Project, with 100% of the tutors indicating either agreement or strong agreement. Agreement with this quality criterion in the D-II Self-funded program was relatively low, with 67% of the tutors indicating agreement or strong agreement and 33% of the tutors indicating less agreement (Table 5). There was no significant difference

in perception between the two groups.

Even though tutors indicated positive perception on this quality criterion, they still proposed the addition of graphic aids, especially pictures and diagrams, and the use of an interesting colour for module presentation.

Overviews and summaries. Students' perceptions associated with the adequateness of the use of overviews and summaries in modules were shown to be high and positive in the two groups. A higher level of agreement occurred in the D-II Self-funded program with 100% of the students indicating either agreement or strong agreement. Agreement in the D-II Project was slightly lower, with 15% of the respondents indicating less agreement (Table 3). There was no significant difference in perception between the two groups.

Analysis on the criteria components indicated a significant difference in perception between the two groups on item 62, the criterion component associated with the effectiveness of summaries in pulling ideas together (Appendix A). Students in the D-II Project showed lower agreement (mean score = 3.80) than those in the D-II Self-funded program (mean score = 4.28) on this component.

According to most students in the D-II Project and a few of those in the D-II Self-funded program, the summaries provided in the modules were so brief that they

did not pull together all of the important ideas in the content description. Students in the D-II Self-funded program usually obtained additional summaries from their tutors. Since the shortened summaries made it difficult for students to derive conclusions, more comprehensive summaries were expected.

Students of both groups also suggested a presentation of charts or diagrams for overviews in order to facilitate picturing a clear relationship between the learning units in a module.

About 83% of the respondents in each group of tutors showed high levels of agreement on the adequateness of the presentation of overviews and summaries in the module (Table 5). The other 17% of the respondents in the D-II Project revealed less agreement and 17% of those in the D-II Self-funded program indicated disagreement. There was no significant difference in perception between the two tutor groups.

Tutors who evaluated module 4 and module 6 considered that the summaries presented were too short, and they did not represent all of the important ideas in the text description.

Readability in general. Perception associated with the general readability of the modules was high and positive in the D-II Self-funded program, with 100% of the

respondents expressing agreement and strong agreement. High and positive perception was also found in the D-II Project, with 93% of respondents indicating agreement and strong agreement (Table 3).

The t-test analysis indicated a significant difference in perception between the two groups of students (Table 4). Although they showed the same positive direction of agreement, the D-II Self-funded students indicated more agreement (mean score = 4.14) on this criterion than did the students in the D-II Project (mean score = 3.86).

Even though there was a glossary provided, either at the front or at the end of the course material books, most students were concerned with the lack of explanation of a number of terms appearing in the text and also in the formative-test of module 3. They affirmed that too much time had to be spent looking up terms in a dictionary. In order to save learning time, students also suggested that the glossary of the terms used in the module should be provided at the end of a module, not at the end of the course material.

In general, students considered that the writing style was relatively enthusiastic and supportive. However, they judged the writing style to be wordy and not very concise.

Tutors' perceived agreement with the general readability of modules was high in both groups, with 83% of

tutors in the D-II Project and 83% of those in the D-II Self-funded program indicating agreement and strong agreement (Table 5).

Tutors had the same positive perceptions on the writing style used in the module in relation to its enthusiasm and support. On the other hand, they proposed the use of simpler sentences in the text description to facilitate understanding. They also suggested both the provision of a complete explanation of terms appearing in the text, and placement of the explanation at the end of every module or as a footnote.

Practice activities. Within each student group, over 90% of the respondents expressed a high level of agreement on the adequacy of the practice activities in the modules (Table 3) which resulted in a lack of a statistically significant difference in perception between the two groups. Nonetheless, students gave some comments on the practice activities of the modules. They suggested that the number of test items in the module should be increased from the present ten items in order to allow more chance for self-asessment.

There is evidence of the effectiveness of placing sample answers elsewhere in the book (Martland et al., 1984); the majority of students of both groups, however, required the provision of the answers right after the test

items listed. Other students who evaluated module 5 stated that sometimes key answers presented in modules were incorrect which made them doubt all of the answers. Unlike other modules, in module 5, students did not find descriptions of the answers which they considered to be helpful to them in clarifying the problem addressed.

When this study was conducted, the self-assignment had not been distributed to students, so they could not provide evaluations of the assignment. The initial self-assignment was considered to be useful for their learning, but they also felt it was necessary to know the results in order to evaluate their progress after studying 50% of the course material.

A very high level of agreement with the adequacy of the practice activities presented in the module was shown in the two tutor groups (Table 5) which resulted in a lack of a significant difference in perception between the two groups.

Since the students were restricted in their ability to obtain additional materials, tutors suggested an increase in the number of formative-test items which comprised all the module content. One tutor who evaluated module 4 proposed more clarification on the answer keys. In addition, tutors suggested the modification of the type of test, that is, not only using multiple choice questions but

also essay questions. They also proposed the returning of the self-assignment results which could be used as feedback and as discussion topics in tutorials.

General presentation. Unlike other criteria which tended to be given positive perceptions given by both students and tutors, the appropriateness of the general presentation of modules had relatively negative perceptions by both students and tutors. Low level agreement was articulated in both groups of students with 56% of the respondents in the D-II Project and 47% of the respondents in the D-II Self-funded program indicating disagreement (Table 3). Since both student groups had similar negative perceptions of the general presentation, the t-test analysis indicated a lack of a significant difference in their perceptions.

The majority of students in both groups stated that a considerable amount of time was needed to understand the modules because they had to read them several times. The density of ideas was considered to be appropriate, but the description was too long. They suggested more brief and concise descriptions. Many students considered that the material was relatively difficult to understand, was relevant to their jobs, and would broaden their knowledge.

All tutors (100% of respondents) in the D-II self-funded program showed agreement on the appropriateness of

the general presentation of modules, whereas only 50% of tutors in the D-II Project showed agreement and the rest revealed disagreement (Table 5). The t-test analysis resulted in a significant difference in perception between the two tutor groups, indicating the tutors in the D-II self-funded program expressed higher level of agreement (mean score = 3.96) than that of the D-II project tutors (mean score = 3.00). (See Table 6).

Tutors in the D-II Self-funded program believed that the presentation of a module in general was relatively easy to understand. Tutors in both groups, however, proposed a simpler text description in order to save time in reading. They also affirmed that the tutorial frequency provided was insufficient for discussing all materials in the modules, therefore an addition to the number of tutorials was felt to be crucial.

A tutor who evaluated module 4 found the description of the cooperation laws and regulations to be incomplete. Since the social phenomena is always changing in society, tutors suggested that the module content be regularly updated in order to stay current.

Combination of media. As stated in Chapter II, in the D-II Project, a set of audio-cassettes was used to support the modules for the tutorial groups in the three subdistrict areas. Each tutorial group in that areas could

use the cassettes by taking turns.

Within each group, both the D-II Project and the D-II Self-funded, over 90% of the respondents perceived the need for using other media to present alternative points of view and approaches to facilitate understanding of the modules (Table 3). Thus, even though the D-II Self-funded students did not use any supported media for the Social Science and Mathematic courses, they expressed the need for the audio-cassette as support media for the course materials.

Since the provision of the cassettes included approximately 180 students in the three subdistrict areas (the UT's guided territory in Jakarta), many of the D-II Project students stated that they had a limited chance to use the cassettes.

Students from both D-II programs proposed the use of other media, such as a play presentation on the radio, newspapers, magazines, TV programs, and slide projectors. They expected to be able to borrow and use these support media in their study groups or in tutorials. If they had to buy the audio-cassettes, for example, they hoped that the price would be reasonable for them.

High level agreement with the use of a combination of media was expressed by the two groups of tutors, with 100% of the respondents of each group indicating agreement and strong agreement (Table 5). Since both groups were similar

in the level of agreement, there was no significant difference in perception between them.

Tutors emphasized the importance of the support media because the media would present different approaches for students to take in studying the modules. Since the students were between 35 - 45 years old, reading activities must be balanced with other learning approaches. The tutors suggested a reasonable price for the audio cassettes that was within the reach of all students.

Module development. High level agreement with module improvement for the two student groups was over 85% (Table 3). Both groups showed low level agreement on item 114, the component related to the text presentation in two columns (mean score = 3.38 in the D-II Project and mean score = 3.11 in the D-II Self-funded group). (See Appendix A). They stated that the two column text presentation would perform like a newspaper and would result in a smaller letter size. Most students expected the use of margin notes, margin indexes, and glossary indexes in every learning unit.

Tutors gave more positive responses than students to the module development, with 100% of the respondents in each tutor group expressing high level agreement (Table 5). The similar response in agreement resulted in a lack of a significant difference in perception between the two

groups. Both tutor groups also asserted low level agreement on item 114, linked to the two column text presentation (Appendix B). The D-II Project had a mean score of 3.83 and the D-II Self-funded group had a mean score of 3.50. Thus, like the students, most tutors were not very interested in the use of the two column text presentation, because they argued that it would split concentration when reading. In general, tutors supported the other three components, but the use of a glossary index, as presented in Example 3 - Appendix E, was most favored.

The Mathematics course.

The clarity and consistency of objectives. Within each group, over 98% of respondents expressed positive perception on the clarity and consistency of the objectives stated in the modules (Table 7). The t-test analysis results, however, showed a significant difference in perception between the two groups (Table 8). The D-II Self-funded students showed more agreement (mean score = 4.33) than did the D-II Project students (mean score = 4.08).

Students suggested the provision of a statement of objectives in every learning unit. The majority, however, stated that the objectives were clear and consistent with both the exercise and the formative-test.

Tutors in both the D-II Project and the D-II Self-funded program revealed high level agreement on the clarity and consistency of the statement of objectives as well, with 100% of respondents in both groups indicating either agreement or strong agreement (Table 9). Despite their perceived agreement, tutors agreed that the general and specific objectives were not entirely consistent with the exercises and formative test. This view was stated by tutors who evaluated module 3. Another tutor who evaluated module 5 articulated that the specific objectives stated did not meet the requirement of the writing objective in specific terms.

The clarity of presentation of concepts and principles. The level of agreement with the clarity of concepts and principles presented in the module was shown to be high in both student groups, with over 98% of respondents indicating agreement (Table 7).

The t-test analysis showed a statistically significant difference in perception between the two groups (Table 8). The students in the D-II Self-funded program appeared to be more in agreement with the clarity of the concepts and principles presentation (mean score = 4.38) than the students in the D-II Project (mean score = 4.16).

In general, students gave positive commments on the clarity of concepts and principles presentation. As did

the students and tutors who evaluated the Social Science Course material, these students also proposed the use of underlining for the key terms in sentences, instead of the use of italics. In module 6, students found inconsistency between the sequence of specific objectives and the sequence of the content description. Another student affirmed that much of the information in module 3 actually was based on materials in module 4.

The level of agreement with the clarity of the presentation of concepts and principles was also high in the two tutor groups, exceeding 80% (Table 9).

Analysis on item 24, related to the clear relationship between content segments, indicated relatively low level agreement (means score = 3.40 in the D-II Project and mean score = 3.83 in the D-II Self-funded group). (See Appendix D). This finding was supported by the comments of the tutors who evaluated module 3. They complained that the content material was so broad that it was difficult to find the important concepts or ideas.

The use of examples and vocabulary aids. Students in both the D-II Project and Self-funded program indicated high level agreement on the appropriateness of the use of examples and vocabulary aids to highlight key ideas in the modules, with approximately 90% of them indicating either agreement or strong agreement (Table 7).

Table 7

Students' Perceptions of Mathematics Course Quality

Program	Project N = 44					Self-funded N = 55				
	Percentage of sample					Percentage of sample				
Criteria	SD	D	LA	A	SA	SD	D	LA	A	SA
Objectives	-	-	2	80	18	-	-	2	49	49
Concepts	-	-	-	81	9	-	-	2	62	36
Examples	-	-	11	78	11	-	2	5	73	20
Information	-	11	9	73	7	-	7	35	45	13
Visual	-	2	2	80	16	-	4	7	74	15
Summary	-	-	-	71	29	-	4	13	65	18
Readability	-	-	14	84	2	-	2	11	82	5
Practice	-	-	2	87	11	-	-	5	81	14
General	-	11	50	39	-	2	20	27	47	4
Combination	-	-	3	70	27	-	4	9	65	22
Development	-	7	7	66	20	-	2	2	85	11

Note: SD = Strongly Disagree; D = Disagree; LA = Less Agree; A = Agree; SA = Strongly Agree

Table 8

t-Test Analysis of Quality Perceptions on Modules of Mathematics by Student Group and Criteria

Criteria	Mean score: Project group	Mean score: Self-funded group	t-value
Objectives	4.08	4.33	-3.12*
Concepts	4.16	4.38	-3.33*
Examples	3.88	3.99	-1.06
Information	3.70	3.62	.60
Visual	4.02	3.95	.68
Summary	4.15	3.81	3.27*
Readability	3.87	3.86	.08
Practice	4.14	4.11	.66
General	3.18	3.23	-.32
Combination	4.23	3.96	1.97
Development	3.80	3.99	-1.73

df = 97 * : $p \leq .05$

Table 9

Tutors' Perceptions of Mathematics Course Quality

Program	Project N = 5					Self-funded N = 6				
	Percentage of sample					Percentage of sample				
Criteria	SD	D	LA	A	SA	SD	D	LA	A	SA
Objectives	-	-	-	100	-	-	-	-	67	33
Concepts	-	-	20	80	-	-	-	17	66	17
Examples	-	-	40	60	-	-	-	33	17	50
Information	20	-	20	60	-	-	17	-	50	33
Visual	-	-	20	80	-	-	17	-	50	33
Summary	-	-	40	60	-	-	-	17	50	33
Readability	-	-	40	60	-	-	-	33	50	17
Practice	-	-	40	60	-	-	-	-	67	33
General	-	-	40	60	-	-	-	83	17	-
Combination	20	-	-	80	-	-	-	-	67	33
Development	-	-	20	80	-	-	-	33	34	33

Note: SD = Strongly Disagree
D = Disagree
LA = Less Agree
A = Agree
SA = Strongly Agree

Table 10

t-Test Analysis of Quality Perceptions on Modules of Mathematics by Tutor Group and Criteria

Criteria	Mean score: Project group	Mean score: Self-funded group	t-value
Objectives	4.05	4.33	-1.61
Concepts	3.72	4.13	-1.80
Examples	3.30	4.08	-1.76
Information	3.28	4.00	-1.20
Visual	3.70	3.92	-.43
Summary	3.50	4.04	-1.42
Readability	3.43	3.72	-.82
Practice	3.71	4.36	-2.71*
General	3.55	3.04	1.99
Combination	3.87	4.17	-1.09
Development	3.80	3.99	-1.73

df = 97 * : $p \leq .05$

Besides their high level agreement on this criterion, students who evaluated module 1 suggested that examples should be more clear, not so verbose. Other students who evaluated modules 5, 6, and 9 put forward the suggestion of provision of examples which were more related to real situations, especially for elementary school class activities. The examples given in module 7 were so few and so narrow that they could not help clarify the important concepts in the text, according to another student.

The level of agreement by tutors with the appropriateness of the use of examples and vocabulary aids given in the module was low, with 40% of tutors in the D-II Project and 33% of those in the D-II Self-funded program indicating less agreement (Table 9). Since both groups were similar in the level of agreement, there was no significant difference in perception between the two groups.

There was a significant difference in perception between the two tutor groups on the two components related to the appropriateness of the use of examples for illustration and the relevancy of examples with real situations (item 31 and item 34). Tutors in the D-II Self-funded program exhibited more agreement than those in the D-II Project (Appendix D).

In addition, both groups presented low level agreement (mean scores = 2.80 and 3.00) with item 32, the component linked to the provision of analogies supporting content (Appendix D). Tutors affirmed that the examples and analogies presented in the modules should be relevant to the students' real activities in the elementary schools. Tutors who evaluated module 2 stated that the analogies and examples given in the module were not easy to understand (due to the use of several unexplained Mathematics symbols).

Accessibility to information. The two groups of students expressed different perceptions associated with the use of adjunct questions, study directions, and additional materials to help them access information on text.

In the D-II Project, about 80% of students showed either agreement or strong agreement (Table 7). In contrast, 40% of students in the D-II Self-funded program asserted low level agreement with the accessibility to information criterion. The t-test analysis, however, resulted in a lack of a significant difference in perception between the two student groups.

Students in each group showed low level agreement on the two criteria components: the accessibility to additional materials which supported modules (item 44) and

the benefits of reading those materials (item 45). For item 44, the mean scores of agreement were 2.77 and 2.62. For item 45, the mean scores were 3.34 and 2.95. (See Appendix C).

As in the Social Science course material, there was no list of suggested additional materials provided in the modules of the Mathematics course, except for the bibliography. Some of the textbooks in the bibliography were marked by an (*) without explanation of the meaning of the symbol. Since the course material was considered to be very difficult to understand, several students did not think that any additional materials would be read. However, the majority of students demanded a list of support materials with which to enrich their insight of the modules and also information about how to access those materials.

Most students believed that the questions placed before, into, or after a passage of text directed their understanding of certain learning objectives. These kinds of questions, however, could only be found in a few modules of the course material, e.g., in modules 1, 2, 3, and 6.

Low level agreement with the accessibility to information criterion was shown by tutors in the D-II Project, with 40% of them indicating strong disagreement and less agreement. On the other hand, 83% of tutors in

the D-II Self-funded program revealed high level agreement with this criterion (Table 9). There was no significant difference in perception, however, between the two tutor groups. In other words, both groups were in relative agreement with the appropriateness of the inclusion of adjunct questions, study directions, and additional materials to help learners to access information on the text.

Analysis of the criteria components revealed that both tutor groups gave low level agreement with the two components, item 44 and item 45, associated with the accessibility to additional support materials and the advantages of those materials (Appendix D). For item 44, the mean scores of agreement were 2.80 and 3.67. For item 45, the mean scores were 3.00 and 3.33.

Some tutors emphasized the importance of a list of additional materials at the end of every module, but they assumed that obtaining those materials might be difficult. Another tutor suggested that the students read the bibliography given in order to broaden their knowledge of the module content. Other tutors, however, claimed that additional materials might not be needed since the workload of the module itself was very high.

Visual presentation and layout. High level agreement with the usefulness of the visual presentation and layout

in the module was asserted in both the D-II Project and Self-funded students, with over 89% of respondents in each group indicating either agreement or strong agreement (Table 7).

There was no explanation given to some Mathematics symbols, such as $\forall$, $\in$, $\ni$, $\subset$, $\supset$, which were found in modules 2, 3, 4, and 9. This observation was made by many students in both the D-II Project and the Self-funded program.

The majority of the students in the D-II Self-funded program were pleased with the size of the course material book because it was so easy to carry. They, however, were concerned about the small size of the print used and the low quality of paper. There were three students who were also concerned about the low quality of the book binding which resulted in a number of loose and lost pages.

The D-II Self-funded students also found some typographical errors in the content description in module 6, exercise 2, page 320 which caused them confusion. In module 1, students of both groups also encountered wrong notations for illustrations 2 and 3; the notations of the illustrations did not match the explanation in the content description. They suggested careful editing to eliminate typographical errors in the content descriptions and answer keys in order to reduce confusion.

Students of the D-II Self-funded program also proposed a more interesting test item presentation and the avoidance of such presentation of formative-test items as number 3 of learning unit 2 in module 9 page 602. The description of the question was so long and crowded that it was difficult to understand. They said the test item presentation should be clearer and more easily read to avoid misinterpretation.

The level of agreement with the usefulness of the visual presentation and layout criteria was high in both tutor groups (Table 9), with over 80% of respondents in each group indicating agreement and strong agreement. The similarity in the level of agreement resulted in a lack of a significant difference in perception between the two tutor groups.

Both tutor groups consistently responded with low agreement (mean scores were 3.60 and 3.50) on item 54, which was related to the performance of the modules in general (Appendix D). The tutors suggested a more interesting presentation of pictures and graphs, and more use of colour, if possible. Another tutor proposed a better quality of paper and book binding.

Overviews and summaries. High level agreement on the adequateness of the use of overviews and summaries in the modules was expressed by the D-II Project students, with 100% of respondents indicating agreement and strong

agreement. The D-II Self-funded students displayed high level agreement as well, with 83% of them indicating agreement and strong agreement, and 17% indicating disagreement and less agreement (Table 7). There was no significant difference in perception between the two student groups.

Analysis on the criteria component resulted in a statistically significant difference in perception between the two groups on item 62, which was associated with the effectiveness of the summaries in pulling ideas together. The D-II Project had a mean score of 4.12, whereas the D-II Self-funded group had a mean score of 3.64.

The two groups also showed a statistically significant difference in perception of item 63, linked to the adequateness of summaries in providing cross referencing across segments of the content. The D-II Project had a mean score of 4.20 and the D-II Self-funded had a mean score of 3.67. Thus, the D-II Project students displayed slightly more agreement than the D-II Self-funded students on these two components. (See Appendix C).

Students of both groups affirmed that the summaries were so brief that they did not contain all important facts in the modules. They suggested that the summaries should be more complete, should relate to the objectives, and

should leave some interesting thoughts for studying the next set of materials.

Low level agreement was indicated by tutors in the D-II Project on the adequateness of overviews and summaries presented in the modules, with 40% of respondents indicating disagreement (Table 9). The tutors in the D-II Self-funded program, however, articulated high level agreement on this quality criteria, with 83% of them manifesting agreement and strong agreement. Even though both groups showed different percentages of agreement, there was no significant difference in their perceptions (Table 10). Thus, both tutor groups had relatively positive perceptions about the presentation of overviews and summaries as presented in the modules. Several tutors considered that the summaries given were too short and were not comprised of the important facts in the modules.

Readability in general. Over 86% of respondents in each group of students expressed high level agreement with the general readability of the modules; whereas the remainder revealed less agreement and disagreement (Table 7).

Both student groups showed low level agreement (the mean scores were 3.48 and 3.51) on item 76, the criterion component affiliated with the clarification of the new and

foreign terms used in the modules (Appendix C). For this component, students suggested that the technological terms used should be clarified and explained immediately after the terms appeared, or in footnotes, rather than having these terms collected in the glossary in the beginning or in the end section of the course material. The majority of students, however, considered that the writing style used in the modules was relatively clear and showed enthusiasm.

Tutors in the D-II Project expressed low level agreement on the general readability of the modules, with only 60% of respondents indicating agreement. Relatively low level agreement was also shown by the tutors in the D-II Self-funded program, with 67% of them indicating less agreement (Table 9). As noted in Table 10, however, there was no significant difference in perception between the two groups.

Analysis on the criterion component showed that both tutor groups gave low level agreement (the mean scores were 2.40 and 2.83) on item 76, the criteria component linked to the clarification of the new and foreign terms presented in modules (Appendix D). Tutors stated that a number of terms were not sufficiently clarified. According to the tutors, every term should be followed by a definition.

As with the students, the tutors also believed that the writing style was relatively clear and showed

encouragement. However, they suggested a more concise text description using simpler sentences which were not as wordy as those in the present modules. Another tutor in the D-II Self-funded program pointed out the lack of clarity in the description in module 5, page 236, lines 5 to 8.

Practice activities. The level of agreement with the adequateness of the practice activities presented in the modules was shown to be high in the two groups of students, with over 95% indicating either agreement or strong agreement (Table 7).

Analysis, however, disclosed that both student groups gave low level agreement (the mean scores were 3.66 and 3.55) on item 82, which was related to the difficulty level of the formative-test in the modules (Appendix C). The students affirmed that the difficulty level was appropriate but they thought some items would be difficult to answer without the answer keys.

Since the students considered that the practice activities helped them to do self-assessment, they proposed an extra assignment, an addition to the number of exercises, and formative-test items. They suggested a modification of the test format; the test items should not only use the multiple choice test format with four responses, but also should include the cause-effect relationship test format, such as was used for several

items in the final examination. Students also proffered the provision of the answer keys placed at the end of every module.

The initial self-assignments were held to be beneficial for the students' understanding of the modules. The students affirmed that the self-assignment results should be given for them to gauge their progress.

High level agreement with the adequateness of the practice activities presented in the modules was expressed by tutors in the D-II Self-funded program, whereas the tutors in the D-II Project revealed low level agreement, with 40% of them indicating less agreement (Table 9). The statistical analysis resulted in a significant difference in perception between the two tutor groups, with the D-II Self-funded group showing more agreement (mean score = 4.36) than the D-II Project tutor group (mean score = 3.71). (See Table 10).

As with the students, the tutors also requested some modification of the formative-test. Tutors suggested augmentation of the number of test items. The test items could consist of 10 multiple choice questions, using the same format as those used in final examinations, and 5 essay questions. They also suggested that the self-assignment results should be sent to students to provide feedback.

General presentation. Students' agreement on the appropriateness of the general presentation of the modules in both groups was relatively low, with 61% of students in the D-II Project and 49% of students in the D-II Self-funded program indicating either strong disagreement, disagreement, or less agreement (Table 7). The t-test analysis revealed a lack of a statistically significant difference in perception between the two groups.

On item 92 there was very low level agreement (mean scores of 2.82 and 2.80), linked to the statement that reading the module was not too time-consuming (Appendix C).

Students realized that, to understand the module completely, they should read the course material more than once. Students also acknowledged that they could not completely understand the course materials without tutor help. They considered that the materials presented in the modules were not closely related to the materials needed to conduct their jobs in the elementary schools but, in general, the materials enriched their knowledge.

Low level agreement was also shown by the tutors in both groups to the general presentation of the modules. About 40% of tutors in the D-II Project and 83% of those in the D-II Self-funded program expressed less agreement (Table 9). There was no significant difference in perception between the two groups.

Tutors in the D-II Self-funded program mentioned that modules in general were difficult. Both tutor groups stated that it took a lot of time to understand them because the descriptions of materials were too verbose. Another tutor added that the content materials was so broad that it was difficult to find the essential information that should be retained. Tutors also noted that the depth and scope of content materials should be improved. Tutors believed that there was a need to evaluate the relevancy of the materials to the students' jobs.

Combination of media. Students in both groups indicated high level agreement with the use of a combination of media to support the modules, with over 97% of respondents in the D-II Self-funded group and over 87% of respondents in the D-II Project indicating either agreement or strong agreement.

Students believed that the use of audio-cassettes would provide better learning, therefore they requested the provision of that media for every student at an acceptable price. The audio-cassettes should contain only the important points, not a repetition of the module content. Students also recommended the use of support equipment, slide projectors, and overhead projectors in tutorials.

Tutors in the D-II Self-funded program expressed high level agreement on the use of combinations of support media

to repeat the crucial information of the course materials, with 100% of respondents indicating agreement and strong agreement. As for the D-II Project tutors, 80% of the respondents also agreed with the use of the support media, while the other 20% of the tutors strongly disagreed (Table 9).

Tutors suggested the provision of audio-cassettes in every tutorial group. They did not see the possibility of using the video-cassettes for students, except in TV programs. Tutors also perceived the need for support equipment and overhead projectors for tutorials.

Module development. Students in both the D-II Project and the D-II Self-funded program indicated a positive perception of the improvement of module presentation. About 86% of respondents in the D-II Project and 96% of those the D-II Self-funded program revealed either agreement or strong agreement (Table 7).

Both student groups indicated low level agreement (mean scores of 3.34 and 3.00) on item 114, the criterion component related to the use of two column text presentation (Appendix C). They were not interested in the use of the two column text presentation because they thought it was difficult to read.

The majority of students students agreed strongly with the use of margin notes, margin indexes, and glossary

indexes in module presentation, as long as these did not result in the use of smaller size letters or closer spaced lines (spacing).

Agreement associated with the module development was particularly high in both tutor groups, with 80% of tutors in the D-II Project and 67% of tutors in the D-II Self-funded program revealing agreement and strong agreement (Table 9).

Both tutor groups rated item 114 low (mean scores of 3.00 and 3.33), the component affiliated with the use of two column text presentation (Appendix D).

As with the students, tutors advocated the use of margin notes and margin indexes, but the use of glossary index was most favorable. Another tutor stated that margin notes should be written by students themselves in order to make them learn actively. Most tutors preferred to use one column module presentation because this type of presentation utilized the pages more efficiently and was easier to read.

Analysis of the Association between Quality Criteria in Each Group Sample

The Product Moment Correlation analysis indicated a substantial degree of covariance between quality criteria (Table 11 & Table 12).

In the D-II Project, five quality criteria resulted in

statistically significant correlations, in that each criterion correlated positively with the other quality criteria. The criteria were the clarity and consistency of objectives, clarity of presentation of concept and principles, use of examples and vocabulary aids, accessibility to information, and use of overviews and summaries (Table 11). As the perception of one of the five quality criteria increased, the level of perceptions of the other four criteria tended to increase. All the coefficients were relatively low (.23 to .55), indicating weak to moderate relationships between the perception of each criterion of five criteria.

In the D-II Self-funded program, there was a significant correlation as well between the six quality criteria, in that each criteria correlated positively with all of the other five criteria. The criteria were the clarity and consistency of objectives, clarity of presentation of concepts and principles, use of examples and vocabulary aids, accessibility to information, readability in general, and practice activities (Table 12). The increase of one of these six quality criteria would be followed by an increase in the level of perceptions of the other five. The coefficient correlations were also low to moderate (.22 to .69), indicating not very strong levels of association.

Table 11

Pearson Correlation between Criteria of Course Quality in the D-II Project

(N = 105)

Corr.:	Object.	Concpt	Exmp.	Infor	Visual	Sumry	Readbl	Pract	Genrl	Combn	Dev
Object.	1.00										
Concept	.35*	1.00									
Examp.	.23*	.43*	1.00								
Inform.	.25*	.30*	.33*	1.00							
Visual	.41*	.28*	.29*	.36*	1.00						
Summary	.37*	.44*	.38*	.27*	.31*	1.00					
Readable	.23*	.42*	.35*	.20*	.12	.35*	1.00				
Practice	.36*	.49*	.33*	.21*	.39*	.55*	.31*	1.00			
General	.21*	.16	.16*	.03	-.05	.08	.04	.08	1.00		
Combin.	.26*	.07	.12	.15	.18*	.06	.06	.14	.02	1.00	
Develop.	-.05	.21*	.21*	-.02	-.03	.07	.21*	.18*	-.12	.07	1.00

* Pearson correlation results ≤ than .05 level of significance.

Table 12

Pearson Correlation between Criteria of Course Quality in the D-II Self-funded Program

(N = 116)

Corr.:	Object.	Concpt	Exmp.	Infor	Visual	Sumry	Readbl	Pract	Genrl	Combn	Dev
Object.	1.00										
Concept	.62*	1.00									
Examp.	.45*	.56*	1.00								
Inform.	.29*	.27*	.43*	1.00							
Visual	.18*	.25*	.45*	.22*	1.00						
Summary	.21*	.27*	.58*	.52*	.19*	1.00					
Readable	.45*	.47*	.69*	.45*	.33*	.59*	1.00				
Practice	.43*	.57*	.65*	.41*	.27*	.52*	.47*	1.00			
General	.18*	.21*	.37*	.09	.24*	.32*	.34*	.36*	1.00		
Combin.	-.02	.13	.07	.11	-.13	.07	-.09	.20*	.11	1.00	
Develop	.20*	.25*	.44*	.32*	.51*	.33*	.31*	.42*	.30*	.03	1.00

* Pearson correlation results ≤ than .05 level of significance.

Although the eight quality criteria were interrelated, most correlations were relatively low. This result indicates that the criteria made discrimination which means they were measuring different aspects. So, the quality criteria should be discussed individually.

The findings that the other three criteria were not intercorrelated support the idea of looking at the quality criteria separately, rather than combining them.

Analysis of the Association between the Students' Perceptions and Their Achievement

Perception of course quality consisted of a single criterion derived from the student perceived agreement or diasgreement with the ten quality criteria. This composite score was correlated with students' final examination results for academic achievement. In addition, student achievement was also correlated with the ten quality criteria to understand which of the criteria related to the variability in academic achievement.

Two-tailed t-tests were used to analyze group differences in the general perception of course quality in academic achievement, and in the Grade Point Average (GPA). A significant difference in perception of course quality existed between the two student groups. The students in the D-II Self-funded program showed higher levels of positive perceptions of course quality than those of the

students in the D-II Project (t = -3.14, df = 200). The D-II Self-funded student group also displayed a higher level of achievement when compared to that of the D-II Project students (t = -5.13, df = 200). In addition, the students in the D-II Self-funded program revealed a higher level of GPA than that of students in the D-II Project (t= -8.46, df = 200). There was also a significantly positive correlation between students' achievement and their GPA (r= .66). Thus, it was assumed that there should be a relationship between students' perceptions of course quality and their achievement.

In fact, there was a low degree of relationship between the perception score and the academic achievement (Table 13). The correlation coefficient was very low, indicating no statistically significant relationship between the perception of course quality and students' achievement. For all quality criteria, low correlation coefficients resulted, indicating no relationship between the student achievement and any of the ten quality criteria.

These low correlations suggest that the instrument is functioning effectively in that it is not significantly related to student grades. Students did not associate giving high rating with getting grades, rather their rating of the course quality was independent of their achievement.

Table 13

Pearson Correlation between Students' Perceptions and Their Achievement

(N = 202)

	Achievement		
Perception	Project	Self-funded	Total
Objectives	-.11	-.05	.03
Concepts	-.05	.06	.10
Examples	-.14	.09	.06
Information	-.20	.05	-.01
Visual	.00	-.01	-.02
Summary	.09	.07	.10
Readability	-.16	-.04	-.00
Practice	.11	.03	.10
General	.07	-.12	-.00
Combination	-.04	.14	.00
Course Quality (Total Perception)	-.08	.02	.05

* Pearson correlation results ≤ .05 level of significance.

The low perception of course quality and the low level achievement of students in the D-II Project may be due to the fact that they did not have their own course materials. Since they had to borrow the course materials and return them at the end of each semester, they had to take care of the course materials in order to keep them clean and in good condition.

This situation means that the students had no chance either to make notes or to mark the important parts of the modules. In other words, they could neither use nor interact totally with the modules; ultimately, this could have resulted in insufficient time spent in serious study

of the modules.

According to previous research results (Djalil et al., 1992), a number of students stated that they needed to have their own course materials. In this case, therefore, it seems important that the students have their own course materials. The D-II Self-funded students who have their own course materials had higher course quality perceptions, and had higher levels of achievement as well, even though their course material quality performance was lower than that of the D-II Project students.

Several benefits may result if the students of the D-II Project are provided with their own course materials. The students can use and interact with the modules more freely, allowing them to approach the modules seriously. After finishing their study, the students can still use the modules as resource materials or references for teaching in the elementary schools. In addition, the Government budget for the provision of modules can be used to increase student enrollment in each year, thus the time needed to complete the qualification improvement program for elementary school teachers can be reduced from the ten years now projected.

CHAPTER V

Conclusions, Limitations, Implications, and Recommendations

With the completion of the analysis of perceptions of the various criteria of course quality for the two kinds of modules in the Diploma (D-II) Project and the Diploma (D-II) Self-funded program, several conclusions and recommendations can be reached.

Conclusions

Conclusions relating to the research questions are presented; within each of the conclusions specific recommendations can be made.

Research question #1 restated

Based on the evaluation-criteria, how well do the modules meet the criteria for quality? What are the variations in evaluation between courses and between the two D-II study programs?

The answers to this research question relate to the conclusions regarding the quality of course materials, the variations in perceptions between the D-II programs, the development of the modules, and the association between quality criteria.

Conclusion regarding the quality of course materials. The quality of course material refers to the score on the quality evaluation-criteria. A larger number indicates

more positive perceptions of course quality.

In order to provide good quality course materials to students, course quality criteria with which perception is positive must be identified and maintained, and those causing negative perception must be identified and improved. Analysis of perception of the course material quality in the student and tutor groups has indicated several variables about which either positive or negative perception exists.

Social Science course material. Over 80% of the students in the D-II Project expressed positive perception of the following six course quality criteria: the clarity and consistency of objectives; clarity of presentation of concepts and principles; use of examples and vocabulary aids; use of overviews and summaries; readability in general; and practice activities. Besides showing positive perception on these six criteria, more than 80% of the students in the D-II Self-funded program expressed positive perception on the accessibility to information criterion.

Conversely, a negative perception was expressed by greater than 20% of the D-II Project students on the three quality criteria: accessibility to information, visual presentation and layout, and general presentation; whereas more than 20% of the D-II Self-funded students expressed a negative perception only on the two quality criteria:

visual presentation and layout, and general presentation.

Mathematics course material. Over 80% of the students in both the D-II Project and the Self-funded program expressed a positive perception of the following seven course quality criteria: clarity and consistency of objectives, clarity of presentation of concepts and principles, use of examples and vocabulary aids; visual presentation and layout; use of overviews and summaries, readability in general, and practice activities.

Negative perceptions were expressed by greater than 20% of the students in both the D-II Project and Self-funded program of the two quality criteria: accessibility to information and general presentation.

Thus, both course material samples have positive perceptions on the same six quality criteria: clarity and consistency of objectives, clarity of presentation of concepts and principles, use of examples, use of overviews and summaries, readability in general, and practice activities.

Special attention, however, should be paid to quality criteria such as accessibility to information and general presentation of both course materials. The visual presentation and layout criteria of the Social Science course in the D-II Self-funded program need attention as well.

The negative perception of accessibility to information criterion appears to be related to the students' difficulties in obtaining the additional materials. Further, it might be useful to have the additional support materials listed at the end of a module. At the least, there should be a suggestion that the students read the bibliography used for the module, providing an explanation of the meaning of the symbols used (*, *), or (*)) in the bibliography. An explanation of where the students can borrow or buy those materials should be provided as well as help for the students to access those materials.

The negative perception of the general presentation criterion related to the less than concise text description and the considerable amount of time needed to understand the modules, because students must read the modules more than once. As teachers in elementary schools, the students have limited time available for study. Therefore, a more straightforward text description is needed in order for it to be easy for the students to follow. Since the students affirmed that the modules were difficult to understand it is also important to develop a learning strategy in order for the students to use the study materials effectively.

The negative perception of the general presentation criterion also related to the degree of the relevancy of the course material content to the students' jobs. The content

of the Social Science course material was perceived to be relevant and to enrich students' knowledge. The content of the Mathematics course material, however, was perceived to be not closely related to the material needed for the students to conduct their jobs in the elementary schools. Nevertheless, the students affirmed that, in general, the materials broadened their knowledge.

Some concerns for the visual presentation criterion of the Social Science course material in the D-II Self-funded program were related to the small size of the lettering used, the small distance between lines (spacing) and paragraphs, and the quality of the paper and book binding. It should be noted, however, that the D-II Project students were also concerned about the lack of graphic aids in the text description.

The use of more pictures in the text description and the use of diagrams for overviews to direct student attention should be considered. If small letter size has to be used, double - spacing, as that used in the Mathematics course material of the D-II Self-funded program, could be used. It may be that the quality of paper may not be improved because this would contribute to a higher cost of course material, but the quality of the book binding needs to be improved in order to present an intact package of course materials to the students. Good

quality course material is not useful if the binding of the book disintegrates easily.

Students in both the D-II Project and Self-funded program revealed positive perceptions on the criterion: the use of combination of media. The provision of support media was considered to provide alternative approaches in studying the course material.

Conclusion regarding the variations in perceptions between study programs. Several criteria of the course materials in the D-II Self-funded program received higher levels of positive perception by the students when compared to criteria of the course materials in the D-II Project.

Of the ten criteria of Social Science course quality measured for differences in perceptions between the two student groups, five criteria resulted in statistically significant levels of difference (Table 4). The five criteria -- proximity to the clarity and consistency of objectives, the clarity of presentation of concepts and principles, accessibility to information, use of overviews and summaries, and readability in general-- indicated a higher level of positive perception by the D-II Self-funded students than that by the D-II Project students.

Of the ten criteria of Mathematics course quality measured for differences in perceptions between the two student groups, three criteria resulted in statistically

significant levels of difference (Table 8). Of these, two criteria --proximity to the clarity and consistency of objectives and the clarity of presentation of concepts and principles-- indicated slightly higher levels of positive perception by the D-II Self-funded students than those by the D-II Project students. One criterion -- use of overviews and summaries-- resulted in lower levels of positive perception in the D-II Self-funded group than in the Project group.

Thus, the D-II Self-funded students have higher levels of positive course perceptions on five quality criteria of Social Science and on two quality criteria of Mathematics than those of the students in the D-II Project.

These results are contrary to what was anticipated. Since the performance of the D-II Project course materials is better than that of the D-II Self-funded program, it was expected that positive perception of course quality would be much higher in the D-II Project than in the D-II Self-funded program.

It is assumed that the students in the D-II Self-funded have greater motivation to study because they became involved in this program based on their own interests not because they must take this program, as was the case with the D-II Project students.

Another assumption for this finding relates to the

tutorial system conducted in the D-II self-funded program. The tutorials system, which primarily presents the main ideas of the modules, may help the students to understand more easily what the modules are about, and may ultimately help them to have positive perceptions of course quality.

The real factors contributing to the higher positive perceptions of course quality and higher levels of achievement and GPAs of students in the D-II Self-funded than students in the D-II Project in this study is unclear. It could be the assumptions stated above but, since most of the respondents in the D-II Self-funded were females (96% of all respondents - see Table 1), the contribution of gender effect cannot be eliminated.

There is no available study conducted in Indonesia which investigates the influence of gender differences on achievement. Several studies conducted in North America, however, revealed that gender influences how people study for specific things. In the investigation of sex differences in performance on ability tests, Antill and Cunningham (cited in Basow, 1980) found that females generally are superior to males in perceptual speed and accuracy tests. In addition, Grolewski and Rodgon (cited in Basow, 1980), in an investigation of role orientation with regards to the relationship between affiliation and achievement motives, found that college women who did not

believe in traditional roles for women displayed high achievement motivation under standard instructions aimed at challenging their intelligence. Basow (1980) stated that, in research about measuring achievement motivation and aspiration, most findings revealed that females generally score higher than males in Work Orientation (desire to work hard).

Conclusions regarding the development of the modules. The students felt that development of the text presentation was needed. Three components of development criteria --the use of margin notes, margin indexes, and glossary indexes for each learning unit, received positive perceptions from the students in both the D-II Project and Self-funded program. Conversely, the students were not interested in the two column text presentation because they thought it was difficult to read and would split concentration.

Conclusions regarding the association between quality criteria. There are several positive relationships between quality criteria of the course materials. In the D-II Project, five quality criteria resulted in positive correlations (Table 11). They are the clarity and consistency of objectives, clarity of presentation of concepts and principles, use of examples and vocabulary aids, accessibility to information, and use of overviews and summaries.

In the D-II Self-funded program, six quality criteria such as the clarity and consistency of objectives, clarity of presentation of concepts and principles, use of examples and vocabulary aids, accessibility to information, readability in general, and practice activities, were significantly correlated with each other.

The other three criteria, visual presentation and layout, general presentation, and combination of media did not correlate with each other nor with any other seven criteria. The quality criteria in measuring course quality should not be combined together but should be discussed separately.

Research question #2 restated:

Is there a relationship between the quality of the modules and student achievement and if so, what is the nature of that relationship?

The answer to this research question is linked to the conclusion regarding the association between students' perceptions and their achievement.

Conclusion regarding the association between students' perceptions and their achievement. Students' achievement levels have no correlation with their perceptions of course quality. In both the D-II Project and in the D-II Self-funded group, there was no statistically significant

correlation between any of ten criteria of course quality and achievement.

Research question #3 restated:

Do students and tutors perceive (evaluate) the quality of modules in the same manner? Why or why not?

The answer to this research question relates to the conclusion regarding the course material quality perceived by tutors and students.

Conclusion regarding the course material quality perceived by tutors and students. For Social Science course materials, 60% of the tutors in the D-II Self-funded program expressed positive perception with nine quality criteria. The same kind of perception was also expressed by 60% of the tutors in the D-II Project to only six criteria: clarity and consistency of objectives, clarity of presentation of concepts and principles, visual presentation and layout, use of overviews and summaries, readability in general, and practice activities. Negative perception was expressed by 40% of tutors in the D-II Project to three quality criteria: the use of examples and vocabulary aids, accessibility to information, and general presentation.

Thus, both students and tutors showed the same perceptions of the quality criteria of Social Science

course material. They had positive perceptions of the five criteria: clarity and consistency of objectives, clarity of presentation of concepts and principles, use of overviews and summaries, readability in general, and practice activities. Thus, they perceived differently on one criterion: the visual presentation and layout. Students revealed negative perceptions on the usefulness of visual presentation in the Social Science modules, while tutors perceived this criteria positively.

For the Mathematics course material, 60% of the tutors in the D-II Project expressed positive perception with nine criteria, whereas 60% of tutors in the D-II Self-funded program expressed positive perception on the same criteria except for the general presentation. Negative perception was given to this criterion by the D-II Self-funded tutors.

Tutors and students showed positive perceptions on the same seven criteria. Thus, they perceived differently on two criteria: accessibility to information and general presentation. Students in the D-II self-funded revealed negative perceptions on the accessibility to information, but tutors in both the D-II programs showed positive perceptions.

Unlike the D-II Project tutors, the D-II Self-funded tutors and both the D-II program students held negative perceptions on the general presentation of the Mathematics

course material.

Therefore, it can be concluded that the tutors are relatively pleased with the quality of the course materials, but when compared to students, it seems that students are more pleased with the course quality than the tutors. The tutors' areas of concern about the course material quality, however, are relatively the same as the students' areas of concern.

Negative perceptions of several tutors on the use of example and vocabulary aids criterion was linked to the few examples given in the text. The use of a variety of examples will provide clarity and sustain interest (Meacham & Evans, 1989). The tutors' comments and suggestions on the accessibility to information and the general presentation criteria are the same as those of students; for example, the need for the provision of the required additional materials, and the need for more succinct text descriptions in order to save time in reading.

Negative perceptions of several tutors on the readability in general criterion of Mathematics course material related to the lack of clarification of the technological terms appearing in the text which resulted in confusion. Confusion will dampen the enthusiasm of even the most ardent student, therefore, the provision of a glossary of the terms at the end of a module seems

necessary.

There is a significant difference in perceptions between the two tutor groups on one criteria of Social Science course quality (Table 6). This criterion --general presentation-- indicated higher levels of positive perceptions by the tutors in the D-II Self-funded program than those in the D-II Project. In addition, only one criterion of the ten criteria of Mathematics course quality measured for differences in perceptions between the two tutor groups resulted in a statistically significant level of difference (Table 10). This criterion --practice activities-- indicated higher levels of positive perception by the tutors in the D-II Self-funded program than those in the D-II Project.

In tutors' perceptions, the combination of media was also considered to be important because it provides different learning approaches. As with the students, tutors also proposed the use of audio-cassettes for individuals and slide projectors for tutorial groups as alternatives to the use of a combination of media.

Tutors, in both the D-II Project and Self-funded program, also showed positive perception with the module development criteria, but they were most favorable on the use of the glossary index. As with the students, tutors preferred to use one column text presentation because it

utilized the pages more efficiently and was easier to read.

Limitations

The course materials from only two subjects were evaluated in this study so the results cannot be generalized for all course materials in the D-II study program which have different subject characteristics.

The size of the sample of this study is small compared to the size of the population and is not representative of all students throughout the provinces in Indonesia. Therefore, generalizations about the perceptions of course quality cannot be made.

It is anticipated that the presentation of tutorials will influence the students' understanding of a module which will ultimately influence their perceptions of course quality. Thus, conclusions about their genuine perceptions based on the quality of the course material itself cannot be drawn.

Implications

The implications of this study are linked to the implementation of the research findings to reconstruct the textual design of course materials, the recruitment of UT staff involved in course material development, and the development of a learning strategy to study course material effectively.

The improvement of the course material should certainly be undertaken with consideration of such factors as economic issues (cost variable) and other related policies at UT. However, it should be noted that it is suggested that reactualization on the course be conducted at least within a four year period (Chacon, 1981).

The new model of the textual design should consider some suggestions which are explained as follows:

1) The use of the same format in writing the general and specific objectives for every module.
2) The use of underlining for the key terms instead of the use of italics. The systematic and logical presentation between segments of content should be maintained.
3) The examples used should be relevant to the students' jobs as elementary school teachers. The use of margin indexes and possibly the use of margin notes should be considered to facilitate references to key points.
4) The use of adjunct questions should be applied by every course writer in writing the module because it helps students to understand certain learning objectives. The additional materials, or bibliography, including reading suggestions and indications as to where the materials can be accessed, should be listed at the end of a module. The meaning of the symbol used in the bibliography (*)) should be explained.

5) A better quality of book binding should be employed. Typographical errors should be avoided, both in the text description and in the answer keys, to reduce confusion. Control should be increased in the editing and printing process to avoid inefficient repetition in course material printing. More interesting text, using more graphic aids and in one column presentation, needs to be incorporated into the modules.

6) The same format in the provision of overviews, provided in separate pages, should be used. The use of an overview chart for the course overview can be developed. In order to provide more clarification, the topics which will be discussed in the learning activity should be presented in the form of a glossary index (as appearing in example 3, Appendix E). The glossary index, then should be followed by a brief overview. More complete summaries which contain all the important facts in the modules are necessary in the modules.

7) A glossary of the technological terms used in the text can be provided at the end of each module. The writing style, which was acknowledged to be sufficiently intelligible and stimulating, should be maintained. A more straightforward text description, however, should be presented.

8) Clearer test item presentations should be taken into account. The format of formative-test items should match that of the final examination to allow the student more familiarity with the format. A modification of the formative-test by combining the multiple choice test and the essay test can be considered. Feedback, in this case the self-assignment results, can be given to students to show them their progress.

9) It is also necessary both to develop a discussion system in tutorials and to use a combination of media, such as the use of audio-cassettes for every student, to encourage students to learn actively.

Studies for evaluating course materials in the D-II study program in relation to the instructional design, the updating of information (advances in knowledge in the discipline), and the relevancy of course and real work, need to be conducted continuously and systematically. The study should involve students, graduates, tutors, and experts.

A supportive network of information and communication that is supported by the continous reporting of evaluation results to the interested audiences seems necessary. This network is conceptualized as a series of two way communication links between evaluators, related policy-makers, course writers, and UT's junior staff. The network

can be used as a medium to discuss the research results and to design a strategy for applying them. Thus, developing a system for implementing the research results will result in the improvement of the course material quality.

UT's junior staff who are responsible for preparing the course materials should be recruited intensively for developing and evaluating course materials by implementing short courses, trainings, or post-graduate program offerings.

To encourage students to conduct self-study and to reduce their dependence on tutorials, the use of a study guide as a supplement to course materials is suggested. The study guide will help students to focus on the main ideas and/or pay closer attention to all important facts and concepts of course materials. A study to investigate how students react to the study guide should be conducted.

Methods need to be explore to encourage the D-II Project students to take ownership of their own learning. This may be accomplished by requiring students to purchase the course materials.

Recommendations

This study should be replicated to investigate whether the obtaining results generalize. Samples would be drawn from populations involving students attending semester IV in the following year in areas other than Jakarta and

Bandung.

Since the real factors contributing to the higher positive perceptions of course quality and higher level achievement and GPAs of students in the D-II Self-funded than students in the D-II Project students is unclear, another way of investigating this problem would be to examine the degree to which learners believe they are responsible for their own learning, rather than treating adults prescriptively as in the D-II Project. It may be argued that this Self-funded group had developed effective self-regulated learning habits. A study in which the degree of self-regulation is examined could be informative.

It would be interesting to investigate how students actually use and interact with the course materials through observations or by giving students a diary as the data gathering instrument to obtain the general patterns by which students use the materials. This information is useful for course writers and course designers to develop course materials more appropriately structured either to fit the general pattern of student use, or to encourage students to develop new study patterns. In addition, the influence of gender on achievement seems to be an important factor to investigate.

It would also be interesting to discover how closely the study results will relate to any future studies of the

readability of the course materials to predict reading difficulty.

Since the questionnaire utilized in this study is in the initial stages of development, the implementation of this questionnaire for future studies requires considerable consultation and negotiation among and within the involved parties. In addition, the quality evaluation-criteria have to be periodically actualized with the agreement of the parties.

The research findings, especially the respondents' comments about the modules, showed that several factors should be included and/or elaborated upon in three of the quality evaluation-criteria e.g., visual presentation and layout, combination of media, and general presentation.

Factors relating to the conditions of typography, paper, book binding, book size, and the thickness of the book should be added to the visual presentation and layout criterion. More reasonable prices for the course materials and additional appropriate supplemental media are also important issues which must be addressed and should be added to the combination of media criterion.

To increase the homogenous nature of responses on the instrument, the questions in the three criteria (use of examples, visual presentation, and module development) which had low reliabilities should be rewritten.

In order to obtain greater clarity, the question relating to the appropriateness of the depth and validity of the module content (in the general presentation criterion) should be divided into two separate questions. The first question should ask about the depth of the module content, and the second question should ask about the validity of the module content. A question relating to advances in knowledge in the discipline should also be included in the general presentation criterion.

BIBLIOGRAPHY

Ausubel, D. P., & Robinson, F. G. (1969). School learning: An introduction to educational psychology. New York: Holt, Rinehart and Winston.

Basow, S. A. (1980). Gender stereotypes: Traditions and alternatives (second edition). Monterey, California: Brooks/Cole Publishong Co.

Bates, A. W. (1982). Roles and characteristics of television and some applications for distance learning. Distance Education, 3 (1), 29-50.

Bergen, W. G. (1977). An evaluation of the perception of quality of life in North West British Columbia. Unpublished master's thesis, University of Victoria, Canada.

Borg, W. R., & Gall, M. D. (1989). Educational research: An introduction (fifth edition). New York: Longman.

Chacon, F. J. (1981). A proposal for a course evaluation system in an Open University. A paper in partial fulfillment of the requirements for the degree of Master of Education in the Graduate school Department of Higher education. The Pennsylvania State University, University Park. (ERIC Document Reproduction Service No. ED 207 451).

Chacon-Duque, F. J. (1985). Building academic quality in distance higher education. A monograph in Higher Education Evaluation and Policy. Pennsylvania State University, University Park. Center for the Study of Higher Education. (ERIC Document Reproduction Service No. ED 267 673).

Clyde, A., Crowther, H., Patching, W., Putt, I., & Store, R. (1983). How students use distance teaching materials: an institutional study. Distance Education, 4 (1), 4-25.

Crew, J. (1979). Use of cassettes by external university students (at the University of New England). A report funded by the Education Research and Development Committee.

Djalil, A., Wihardit, K., & Saripudin, U. (1992). Penilaian pelaksanaan program penyetaraan Diploma II guru sekolah dasar (monitoring and evaluation of the implementation of the Diploma II program --at

Universitas Terbuka in Indonesia--). A research report funded by the Directorate General of Higher Education of the Ministry of Education and Culture.

Frase, L. T & Kreitzberg, V. S. (1975). Effect of topical and indirect learning directions on prose recall. Journal of Educational Psychology, 73, 427-436.

Gagné, E. D. (1978). Long-term retention of information following reading from prose. Review of Educational Research, 48 (4), 629-665.

Gagné, R. M & Briggs, L. J. (1979). Principles of instructional design. Toronto: Holt, Rinehart and Winston.

Gay, L. R. (1980). Educational evaluation & measurement: Competencies for analysis and application. Columbus, Ohio: Charles E. Merrill Publishing Co.

Hartley, J. & Burnhill, P. (1977). Fifty guidelines for improving instructional text. Program learning and educational technology 14 (1), 65-73.

Holmberg, B. (1981). Status and trends in distance education. London: Kogan Page.

Holmberg, B. (1982). Recent research into distance education. Hagen, West Germany: Zentrales Institut fur Fernstudienforschung.

Katalog program penyetaraan Diploma II guru sekolah dasar swadana Universitas Terbuka (the catalog of the Diploma II Self-funded program of Universitas Terbuka). (1991). Jakarta: Universitas Terbuka.

Katalog Universitas Terbuka (the catalog of Universitas Terbuka). (1991). Jakarta: Universitas Terbuka.

MacDonald, R. M. (1979). Language in text: A review of research relevant to the design of curriculum materials. In L. S. Shulman (Ed.), Review of research in education. Ithasca, Illinois: Peacock.

Markle, S. M. (1964). Good frames and bad, a grammar of frame writing. New York: Wiley.

Marland, P., Patching, W., Putt, I., & Putt, R. (1990). Distance learners' interactions with text while studying. Distance Education, 11 (1), 71-91.

Marland, P., Patching, W., Putt, I., & Store, S. (1984). Learning from distance-teaching materials: a study of student's mediating responses. Distance Education, 3 (1), 72-106.

Marland, P. W. & Store, R. E. (1982). Some instructional stragies for improved learning from distance teaching materials. Distance Education, 3 (1), 72-106.

McConkie, G. W. (1977). Learning from text. In L. S Shulman (Ed.). Review of research in education. Ithasca: F. E Peacock.

Meacham, D., & Evans, D. (1989). Distance Education: The design of study materials. (Fith edition). Australia: Charles Sturt University.

Melton, R. F. (1990). Transforming text for distance learning. British Journal of Education Technology, 21 (3), 183-195.

Moore, M. G. (1987). Print media. In J. A Niemi and D. D. Gooler (Eds), Technologies for learning outside the classroom. New Directions for Continuing Education 34. San Fransisco: Jossey - Bass.

Mouli, C. R & Ramakrishna, P. (1991). Readability of distance education course materials. Research in Distance Education, 3 (4), 11-13.

Norusis, M. J. (1990). SPSS/PC+Statisyics 4.0 for the IBM PC/XT/AT and PS/2. Chicago: SPSS Inc.

Nuzia, W. Z. (1991). Kesesuaian antara GBPP dengan modul matakuliah IPS 1 program Diploma II penyetaraan guru sekolah dasar di FKIP UT (the relevancy of the Social Science Education 1 course material and the Basic Course Outlines at the Diploma II program, Faculty of Education, Universitas Terbuka). A research report No. 006/K/PM/91. Jakarta: Universitas Terbuka, Puslitabmas.

Paivio, A. (1971). Imaginary and verbal process. New York: Holt, Rinehart and Winston.

Ristarsa, R. (1991). Tingkat keterbacaan modul Pendidikan Matematika 1 bahan program penyetaraan Diploma II guru sekolah dasar (the quality of Mathematics Education 1 the course material for the Diploma II program at Universitas Terbuka Indonesia). A research report funded by Universitas Terbuka.

Rothkopf, E. (1982). Adjunct aids and the control of mathemagenic activities during purposeful reading. In Otto, W and White, S. (Eds.). Reading expository material. New York: Academic Press.

Rumanta, M. (1991). Tingkat keterbacaan materi pokok Pendidikan Ilmu Pengetahuan Alam 1 edisi pertama program penyetaraan Diploma II guru sekolah dasar di FKIP Universitas Terbuka (the quality of the Natural Science Education 1 the first edition course material at the Faculty of Education, Universitas Terbuka). A research report No. 021/P/PM/91. Jakarta: Universitas Terbuka, Puslitabmas.

Schramm, W. L. (1977). Big media, little media, tools and technologies for instruction. Beverly Hills: Sage Publications.

Shaw, B., & Taylor, J. C. (1984). Instructional design: Distance education and academic tradition. Distance education Journal, 5 (2), 277-285.

Skinner, B. F. (1968). The science of learning and the art of teaching. New York: Appleton-Century-Crofts.

Stahl, S. (1983). Differential word knowledge and reading comprehension. Journal of reading behavior, 15 (4), 33-46.

Suparman, A. (1991). Desain instruksional (Instructional design). Jakarta: Dirjen Dikti Depdikbud, PAU/IUC (Bank Dunia XVII).

Suparman, A. (1988). Pokok-pokok panduan penulisan modul Universitas Terbuka (the term of reference for the development of the course materials of Universitas Terbuka). Unpublished manuscript, Universitas Terbuka, Jakarta.

Statistik mahasiswa Universitas Terbuka 1991 (the statistics of Universitas Terbuka' students in 1991). (1992). Jakarta: Universitas Terbuka, Biro Administrasi Akademik dan Kemahasiswaan.

Tabachnik, B. G., Palmer, C. L., & Esmay, J. (1978). Technology is the answer, but what was the question? Audio tape versus video tape for individualized instruction. Improving Human Performance Quarterly, 7, 319-325.

Tabachnick, B. G., & Fidell, L. S. (1989). Using multivariate statistics (second edition). New York: Harper Collins Publishers, Inc.

Taylor, F. J. (1977). Acquiring knowledge from prose and continuous discourse. In M. J. A Howe (Ed.), Adult learning: Psychological research and application. London: Wiley.

The distance education style guide: A guide to the design and preparation of distance education courses. Victoria, Canada: University of Victoria, Distance Education Services University Extention.

Whittington, K, E. (1985). Completion rate studies. In Lambert, M.P., and Welch, S. R. (Eds.), Home study course development handbook (2nd ed.). Washington, D.C: National Home Study Council. (ERIC Document Reproduction Service No. ED 317 826).

Woodley, A., & Parlett, M. (1983). Student drop-out. Teaching at a Distance, 24, Autumn, 2-23.

Worthen, B. R. & Sanders, J. (1987). Educational evaluation: Alternative approaches and practical guidelines. New York: Longman.

Wright, C., & Conroy, C. (1988). Preparing CBI print-based support an information/instructional design perspective. Distance Education, 9 (1), 84-94.

APPENDIX A

t-Test Analysis of Quality Perceptions on Modules of Social Science by Student Group and Criteria/Item

Item		Group Project	Self-funded	t-value
OBJECTIVES	**$\bar{x}$** **sd**	**4.06** **.49**	**4.32** **.41**	**-3.19***
ITEM11	$\bar{x}$ sd	3.82 .90	4.34 .48	-4.01*
ITEM12	$\bar{x}$ sd	4.11 .80	4.33 .47	-1.76
ITEM13	$\bar{x}$ sd	4.25 .57	4.31 .50	-.68
ITEM14	$\bar{x}$ sd	4.07 .57	4.31 .53	-2.45*
CONCEPTS	**$\bar{x}$** **sd**	**4.13** **.41**	**4.32** **.40**	**-2.55***
ITEM21	$\bar{x}$ sd	4.10 .54	4.39 .53	-3.06*
ITEM22	$\bar{x}$ sd	4.16 .61	4.25 .47	-.83
ITEM23	$\bar{x}$ sd	4.08 .46	3.97 .86	.92
ITEM24	$\bar{x}$ sd	4.20 .63	4.38 .49	-1.77
ITEM25	$\bar{x}$ sd	4.13 .85	4.62 .52	-3.86*
EXAMPLES	**$\bar{x}$** **sd**	**4.04** **.40**	**4.20** **.40**	**-2.34***
ITEM31	$\bar{x}$ sd	3.84 .71	4.15 .51	-2.78*
ITEM32	$\bar{x}$ sd	4.05 .50	4.34 .51	-3.23*
ITEM33	$\bar{x}$ sd	4.15 .60	4.31 .47	-1.68
ITEM34	$\bar{x}$ sd	4.12 .76	4.02 .85	.68
INFORMATION	**$\bar{x}$** **sd**	**3.55** **.71**	**4.04** **.51**	**-4.39***
ITEM41	$\bar{x}$ sd	3.95 .97	4.39 .53	-3.13*
ITEM42	$\bar{x}$ sd	4.11 .88	4.41 .53	-2.25*

df = 120
* : $p \leq .05$

Table continues

ITEM43	$\bar{x}$ sd	3.82 .79	4.11 .61	-2.32*
ITEM44	$\bar{x}$ sd	2.51 1.31	3.31 1.07	-3.70*
ITEM45	$\bar{x}$ sd	3.36 1.62	3.97 .98	-2.50*
VISUAL	**$\bar{x}$ sd**	**3.79 .64**	**3.72 .65**	**.56**
ITEM51	$\bar{x}$ sd	3.28 1.53	3.07 1.92	.68
ITEM52	$\bar{x}$ sd	3.77 1.22	4.18 .56	-2.39*
ITEM53	$\bar{x}$ sd	4.13 .43	3.43 1.04	4.90*
ITEM54	$\bar{x}$ sd	4.10 .54	4.15 .36	-.59
ITEM55	$\bar{x}$ sd	3.97 .45	4.21 .41	-3.16*
SUMMARY	**$\bar{x}$ sd**	**3.97 .58**	**4.25 .37**	**-3.28***
ITEM61	$\bar{x}$ sd	4.13 .72	4.34 .48	-1.93
ITEM62	$\bar{x}$ sd	3.80 .81	4.28 .45	-3.99*
ITEM63	$\bar{x}$ sd	3.82 1.12	4.18 .65	-2.18*
ITEM64	$\bar{x}$ sd	4.11 .64	4.21 .45	-.99
READABLE	**$\bar{x}$ sd**	**3.86 .43**	**4.14 .35**	**-3.95***
ITEM71	$\bar{x}$ sd	3.93 .54	3.92 .82	.13
ITEM72	$\bar{x}$ sd	3.92 .78	4.30 .53	-3.13*
ITEM73	$\bar{x}$ sd	3.87 .50	4.11 .41	-2.97*
ITEM74	$\bar{x}$ sd	3.98 .39	4.13 .34	-2.24*
ITEM75	$\bar{x}$ sd	3.97 .58	4.25 .43	-3.02*
ITEM76	$\bar{x}$ sd	3.48 .77	4.12 .58	-5.20*
PRACTICE	**$\bar{x}$ sd**	**4.04 .44**	**4.16 .39**	**-1.59**

df = 120
* : $p \leq .05$

Table continues

ITEM81	$\bar{x}$ sd	4.08 .53	4.21 .49	-1.43
ITEM82	$\bar{x}$ sd	3.59 .74	4.05 .53	-3.94*
ITEM83	$\bar{x}$ sd	4.28 .52	4.21 .45	.74
ITEM84	$\bar{x}$ sd	3.90 .89	4.15 .51	-1.87
ITEM85	$\bar{x}$ sd	4.07 .77	4.28 .58	-1.72
ITEM86	$\bar{x}$ sd	4.16 .66	4.18 .50	-.15
ITEM87	$\bar{x}$ sd	4.23 .62	4.07 .40	1.74
ITEM88	$\bar{x}$ sd	4.13 .94	4.34 .51	-1.56
GENERAL	**$\bar{x}$ sd**	**3.15 .63**	**3.23 .80**	**-.63**
ITEM91	$\bar{x}$ sd	2.85 1.15	3.10 1.12	-1.19
ITEM92	$\bar{x}$ sd	2.90 1.12	2.90 1.19	.00
ITEM93	$\bar{x}$ sd	3.20 1.11	3.10 1.01	.51
ITEM94	$\bar{x}$ sd	3.66 .77	3.84 .78	-1.28
COMBINATION	**$\bar{x}$ sd**	**4.22 .61**	**4.06 .50**	**1.56**
ITEM101	$\bar{x}$ sd	4.36 .66	4.26 .63	.84
ITEM102	$\bar{x}$ sd	4.28 .69	3.79 .69	3.96*
ITEM103	$\bar{x}$ sd	4.02 .90	4.13 .53	-.85
DEVELOP	**$\bar{x}$ sd**	**3.93 .45**	**4.02 .48**	**-1.11**
ITEM111	$\bar{x}$ sd	4.10 .54	4.26 .63	-1.54
ITEM112	$\bar{x}$ sd	4.10 .68	4.36 .48	-2.46*
ITEM113	$\bar{x}$ sd	4.13 .62	4.34 .51	-2.07*
ITEM114	$\bar{x}$ sd	3.38 .82	3.11 1.20	1.41

df = 120
* : $p \leq .05$

APPENDIX B

t-Test Analysis of Quality Perceptions on Modules of Social Science by Tutor Group and Criteria/Item

Item		Group Project	Self-funded	t-value
OBJECTIVES	**$\bar{x}$** **sd**	**3.67** **.88**	**4.21** **.40**	**-1.38**
ITEM11	$\bar{x}$ sd	3.50 1.76	4.16 .41	-.90
ITEM12	$\bar{x}$ sd	3.33 1.75	4.33 .52	-1.34
ITEM13	$\bar{x}$ sd	4.00 .63	4.16 .41	-.54
ITEM14	$\bar{x}$ sd	3.83 .41	4.17 .41	-1.41
CONCEPTS	**$\bar{x}$** **sd**	**3.90** **.50**	**4.30** **.37**	**-1.56**
ITEM21	$\bar{x}$ sd	3.67 .82	4.33 .52	-1.69
ITEM22	$\bar{x}$ sd	3.67 .52	4.33 .52	-2.24*
ITEM23	$\bar{x}$ sd	3.50 .55	4.17 .41	-2.39*
ITEM24	$\bar{x}$ sd	4.33 .82	4.33 .52	.00
ITEM25	$\bar{x}$ sd	4.33 .52	4.33 .52	.00
EXAMPLES	**$\bar{x}$** **sd**	**3.67** **.70**	**3.92** **.67**	**-.63**
ITEM31	$\bar{x}$ sd	4.00 .89	3.83 .31	.35
ITEM32	$\bar{x}$ sd	3.67 .82	4.17 .41	-1.34
ITEM33	$\bar{x}$ sd	3.67 .82	4.33 .52	-1.69
ITEM34	$\bar{x}$ sd	3.33 .82	3.33 1.75	.00
INFORMATION	**$\bar{x}$** **sd**	**3.40** **.42**	**3.47** **.79**	**-.18**
ITEM41	$\bar{x}$ sd	3.83 .75	3.67 1.86	.20
ITEM42	$\bar{x}$ sd	4.17 .98	4.17 .41	.00

df = 10
* : $p \leq .05$

Table continues

ITEM43	$\bar{x}$ sd	3.67 .52	4.00 .63	-1.00
ITEM44	$\bar{x}$ sd	2.50 1.37	2.16 1.72	.37
ITEM45	$\bar{x}$ sd	2.83 1.47	3.33 1.63	-.56
VISUAL	**$\bar{x}$ sd**	**4.25 .52**	**3.46 1.21**	**1.47**
ITEM51	$\bar{x}$ sd	4.33 .52	3.00 2.36	1.35
ITEM52	$\bar{x}$ sd	4.17 .75	2.83 2.23	1.39
ITEM53	$\bar{x}$ sd	4.50 .55	4.00 .63	1.46
ITEM55	$\bar{x}$ sd	4.00 .63	4.00 .63	.00
SUMMARY	**$\bar{x}$ sd**	**3.71 .66**	**3.96 .97**	**-.52**
ITEM61	$\bar{x}$ sd	4.00 1.10	3.67 1.86	.38
ITEM62	$\bar{x}$ sd	3.50 .55	3.67 .82	-.42
ITEM63	$\bar{x}$ sd	3.83 .75	4.17 .75	-.77
ITEM64	$\bar{x}$ sd	3.50 1.05	4.33 .82	-1.54
READABLE	**$\bar{x}$ sd**	**3.36 .57**	**3.97 .58**	**-.33**
ITEM71	$\bar{x}$ sd	4.17 .75	4.17 .41	.00
ITEM72	$\bar{x}$ sd	3.67 1.03	4.33 .52	-1.41
ITEM73	$\bar{x}$ sd	3.67 .82	4.00 .89	-.67
ITEM74	$\bar{x}$ sd	3.67 .52	4.17 .41	-1.86
ITEM75	$\bar{x}$ sd	4.00 .63	4.17 .41	-.54
ITEM76	$\bar{x}$ sd	4.00 .89	3.00 .68	1.29
PRACTICE	**$\bar{x}$ sd**	**4.02 .28**	**4.19 .31**	**-.98**
ITEM81	$\bar{x}$ sd	4.33 .52	4.33 .52	.00

df = 10
* : $p \leq .05$

Table continues

ITEM82	$\bar{x}$ sd	4.00 .63	3.67 .52	1.00
ITEM83	$\bar{x}$ sd	4.00 .63	4.33 .52	-1.00
ITEM84	$\bar{x}$ sd	3.67 .52	4.00 .63	-1.00
ITEM85	$\bar{x}$ sd	3.83 .41	4.33 .52	-1.86
ITEM86	$\bar{x}$ sd	4.17 .41	4.33 .52	-.62
ITEM87	$\bar{x}$ sd	4.17 .41	4.33 .52	-.62
ITEM88	$\bar{x}$ sd	4.33 .52	4.00 .63	1.00
GENERAL	$\bar{x}$ sd	**3.00** **.87**	**3.96** **.25**	**-2.61***
ITEM91	$\bar{x}$ sd	2.83 1.32	3.67 .82	-1.31
ITEM92	$\bar{x}$ sd	2.33 1.36	4.00 .00	
ITEM93	$\bar{x}$ sd	2.83 1.33	4.00 .00	
ITEM94	$\bar{x}$ sd	4.00 1.27	4.16 .41	-.31
COMBINATION	$\bar{x}$ sd	**4.28** **.44**	**4.22** **.40**	**.23**
ITEM101	$\bar{x}$ sd	4.33 .52	4.33 .52	.00
ITEM102	$\bar{x}$ sd	4.17 .75	4.17 .41	.00
ITEM103	$\bar{x}$ sd	4.33 .52	4.17 .41	.62
DEVELOP	$\bar{x}$ sd	**4.33** **.56**	**3.96** **.29**	**1.45**
ITEM111	$\bar{x}$ sd	4.33 .82	4.17 .41	.45
ITEM112	$\bar{x}$ sd	4.67 .52	4.17 .41	1.86
ITEM113	$\bar{x}$ sd	4.50 .55	4.00 .00	
ITEM114	$\bar{x}$ sd	3.83 .75	3.50 .55	.88

df = 10
* : $p \leq .05$

APPENDIX C

t-Test Analysis of Quality Perceptions on Modules of Mathematics by Student Group and Criteria/Item

Item		Group Project	Self-funded	t value
OBJECTIVES	**$\bar{x}$** **sd**	**4.08** **.33**	**4.33** **.44**	**-3.12***
ITEM11	$\bar{x}$ sd	4.09 .88	4.47 .63	-2.50*
ITEM12	$\bar{x}$ sd	4.07 .45	4.24 .64	-1.48
ITEM13	$\bar{x}$ sd	4.07 .59	4.47 .50	-3.69*
ITEM14	$\bar{x}$ sd	4.09 .42	4.13 .86	-.26
CONCEPTS	**$\bar{x}$** **sd**	**4.16** **.26**	**4.38** **.38**	**-3.33***
ITEM21	$\bar{x}$ sd	4.20 .46	4.35 .48	-1.48
ITEM22	$\bar{x}$ sd	4.30 .51	4.25 .55	-.38
ITEM23	$\bar{x}$ sd	4.14 .41	4.18 .64	-.41
ITEM24	$\bar{x}$ sd	4.00 .48	4.40 .56	-3.73*
ITEM25	$\bar{x}$ sd	4.16 .65	4.73 .56	-4.69*
EXAMPLES	**$\bar{x}$** **sd**	**3.88** **.50**	**3.99** **.53**	**-1.06**
ITEM31	$\bar{x}$ sd	3.73 .50	4.02 .65	2.44*
ITEM32	$\bar{x}$ sd	3.89 1.02	3.87 .96	.07
ITEM33	$\bar{x}$ sd	4.09 .47	4.13 .67	-.30
ITEM34	$\bar{x}$ sd	3.82 .97	3.95 .68	-.77
INFORMATION	**$\bar{x}$** **sd**	**3.70** **.65**	**3.62** **.75**	**.60**
ITEM41	$\bar{x}$ sd	4.27 .50	4.15 .78	.94
ITEM42	$\bar{x}$ sd	4.32 .47	4.20 .83	.85

df = 97
* : $p \leq .05$

Table continues

ITEM43	$\bar{x}$ sd	3.82 .84	3.95 .80	-2.20*
ITEM44	$\bar{x}$ sd	2.77 1.43	2.62 1.27	.57
ITEM45	$\bar{x}$ sd	3.34 1.67	2.95 1.93	1.08
VISUAL	$\bar{x}$ sd	**4.02** **.46**	**3.95** **.54**	**.68**
ITEM51	$\bar{x}$ sd	3.86 .91	3.78 .85	.46
ITEM52	$\bar{x}$ sd	4.07 .85	4.04 .77	.20
ITEM53	$\bar{x}$ sd	4.22 .48	4.07 .72	1.23
ITEM54	$\bar{x}$ sd	3.93 .55	3.93 .77	.03
SUMMARY	$\bar{x}$ sd	**4.15** **.38**	**3.81** **.61**	**3.27***
ITEM61	$\bar{x}$ sd	4.16 .43	4.07 .86	.61
ITEM62	$\bar{x}$ sd	4.12 .67	3.64 .91	3.05*
ITEM63	$\bar{x}$ sd	4.20 .63	3.67 1.06	2.95*
ITEM64	$\bar{x}$ sd	4.11 .49	3.85 .71	2.07*
READABILITY	$\bar{x}$ sd	**3.87** **.34**	**3.86** **.48**	**.08**
ITEM71	$\bar{x}$ sd	3.95 .43	3.82 .86	.61
ITEM72	$\bar{x}$ sd	3.86 .63	3.96 .72	-.73
ITEM73	$\bar{x}$ sd	3.86 .51	3.96 .53	-1.47
ITEM74	$\bar{x}$ sd	3.98 .46	4.00 .51	-.23
ITEM75	$\bar{x}$ sd	4.07 .55	3.85 .62	1.79
ITEM76	$\bar{x}$ sd	3.48 1.00	3.51 1.14	-.15
PRACTICE	$\bar{x}$ sd	**4.14** **.31**	**4.11** **.39**	**.66**
ITEM81	$\bar{x}$ sd	4.30 .46	4.13 .51	1.70

df = 97
* : $p \leq .05$

Table continues

ITEM82	$\bar{x}$ sd	3.66 .65	3.55 .72	.82
ITEM83	$\bar{x}$ sd	4.25 .44	4.38 .65	1.40
ITEM84	$\bar{x}$ sd	4.05 .43	3.95 .71	.83
ITEM85	$\bar{x}$ sd	4.14 .59	4.27 .62	-1.11
ITEM86	$\bar{x}$ sd	4.25 .49	4.38 .59	-1.19
ITEM87	$\bar{x}$ sd	4.34 .53	4.40 .60	-.52
ITEM88	$\bar{x}$ sd	4.30 .55	4.44 .54	-1.28
GENERAL	**$\bar{x}$ sd**	**3.18 .67**	**3.23 .87**	**-.32**
ITEM91	$\bar{x}$ sd	3.14 1.00	3.22 1.15	-.37
ITEM92	$\bar{x}$ sd	2.82 1.06	2.80 1.24	.08
ITEM93	$\bar{x}$ sd	3.30 1.03	3.29 1.13	.02
ITEM94	$\bar{x}$ sd	3.45 .90	3.60 .94	-.78
COMBINATION	**$\bar{x}$ sd**	**4.23 .40**	**3.96 .88**	**1.97**
ITEM101	$\bar{x}$ sd	4.39 .92	3.96 1.00	2.17*
ITEM102	$\bar{x}$ sd	4.23 .64	3.91 1.02	1.80
ITEM103	$\bar{x}$ sd	4.09 .29	4.02 .85	.54
DEVELOPMENT	**$\bar{x}$ sd**	**3.80 .69**	**3.99 .43**	**-1.73**
ITEM111	$\bar{x}$ sd	3.89 .92	4.22 .63	-2.13*
ITEM112	$\bar{x}$ sd	3.98 .88	4.35 .62	-2.45*
ITEM113	$\bar{x}$ sd	3.98 .82	4.40 .53	-3.10*
ITEM114	$\bar{x}$ sd	3.34 .89	3.00 1.19	1.58

df = 97
* : $p \leq .05$

APPENDIX D

t-Test Analysis of Quality Perceptions on Modules of Mathematics by Tutor Group and Criteria/Item

Item		Group Project	Self-funded	t value
OBJECTIVES	**$\bar{x}$**	**4.05**	**4.33**	**-1.61**
	sd	**.11**	**.38**	
ITEM11	$\bar{x}$	4.40	4.67	-.83
	sd	.55	.52	
ITEM12	$\bar{x}$	4.00	4.33	
	sd	.00	.52	
ITEM13	$\bar{x}$	4.00	4.17	
	sd	.00	.41	
ITEM14	$\bar{x}$	3.80	4.17	-1.42
	sd	.45	.41	
CONCEPTS	**$\bar{x}$**	**3.72**	**4.13**	**-1.80**
	sd	**.23**	**.47**	
ITEM21	$\bar{x}$	4.00	4.33	
	sd	.00	.52	
ITEM22	$\bar{x}$	3.60	4.00	-1.11
	sd	.55	.63	
ITEM23	$\bar{x}$	3.60	4.17	-1.97
	sd	.55	.41	
ITEM24	$\bar{x}$	3.40	3.83	-1.51
	sd	.55	.41	
ITEM25	$\bar{x}$	4.00	4.33	
	sd	.00	.82	
EXAMPLES	**$\bar{x}$**	**3.30**	**4.08**	**-1.76**
	sd	**.27**	**.96**	
ITEM31	$\bar{x}$	3.40	4.50	-3.32*
	sd	.55	.55	
ITEM32	$\bar{x}$	2.80	3.00	-.16
	sd	1.64	2.37	
ITEM33	$\bar{x}$	3.80	4.50	-2.29
	sd	.45	.55	
ITEM34	$\bar{x}$	3.20	4.33	-2.76
	sd	.45	.82	
INFORMATION	**$\bar{x}$**	**3.28**	**4.00**	**-1.20**
	sd	**1.07**	**.91**	
ITEM41	$\bar{x}$	3.00	4.67	-2.26
	sd	1.73	.52	
ITEM42	$\bar{x}$	4.00	4.17	
	sd	.00	.75	

df = 97
* : $p \leq .05$

Table continues

ITEM43	$\bar{x}$ sd	3.60 .55	4.17 .75	-1.40
ITEM44	$\bar{x}$ sd	2.80 1.64	3.67 1.51	-.91
ITEM45	$\bar{x}$ sd	3.00 1.73	3.33 1.75	-.32
VISUAL	$\bar{x}$ sd	**3.70** **.33**	**3.92** **1.08**	**-.43**
ITEM51	$\bar{x}$ sd	3.60 .55	4.17 .75	-1.40
ITEM52	$\bar{x}$ sd	3.80 .45	3.83 1.94	-.04
ITEM53	$\bar{x}$ sd	3.80 .45	4.17 .41	-1.42
ITEM54	$\bar{x}$ sd	3.60 .55	3.50 1.87	.11
SUMMARY	$\bar{x}$ sd	**3.50** **.64**	**4.04** **.62**	**-1.42**
ITEM61	$\bar{x}$ sd	3.00 1.73	4.33 .52	-1.81
ITEM62	$\bar{x}$ sd	3.60 .55	4.33 .52	-2.28*
ITEM63	$\bar{x}$ sd	3.60 .55	4.17 .75	-1.40
ITEM64	$\bar{x}$ sd	3.80 .45	3.33 1.75	.58
READABILITY	$\bar{x}$ sd	**3.43** **.30**	**3.72** **.74**	**-.82**
ITEM71	$\bar{x}$ sd	3.60 .55	3.00 2.37	.55
ITEM72	$\bar{x}$ sd	3.60 .55	4.00 .00	
ITEM73	$\bar{x}$ sd	3.40 .55	4.00 .00	
ITEM74	$\bar{x}$ sd	3.80 .45	4.33 .52	-1.81
ITEM75	$\bar{x}$ sd	3.80 .45	4.17 .75	-.95
ITEM76	$\bar{x}$ sd	2.40 1.34	2.83 1.60	-.48
PRACTICE	$\bar{x}$ sd	**3.71** **.34**	**4.36** **.43**	**-2.71***
ITEM81	$\bar{x}$ sd	4.00 .00	4.33 .52	

df = 97
* : $p \leq .05$

Table continues

ITEM82	$\bar{x}$ sd	3.80 .45	4.50 .55	-2.29
ITEM83	$\bar{x}$ sd	3.80 .45	4.50 .55	-2.29
ITEM84	$\bar{x}$ sd	3.00 1.73	3.83 .75	-1.07
ITEM85	$\bar{x}$ sd	4.14 .59	4.27 .62	-1.11
ITEM86	$\bar{x}$ sd	4.25 .49	4.38 .59	-1.19
ITEM87	$\bar{x}$ sd	4.34 .53	4.40 .60	-.52
ITEM88	$\bar{x}$ sd	4.20 .84	4.33 .52	-.32
GENERAL	$\bar{x}$ sd	**3.55** **.41**	**3.04** **.43**	**1.99**
ITEM91	$\bar{x}$ sd	3.60 .89	3.33 .82	.52
ITEM92	$\bar{x}$ sd	3.20 1.06	2.67 1.21	.76
ITEM93	$\bar{x}$ sd	4.00 .00	2.50 .84	.00
ITEM94	$\bar{x}$ sd	3.40 .55	3.67 1.97	-.29
COMBINATION	$\bar{x}$ sd	**3.87** **.30**	**4.17** **.55**	**-1.09**
ITEM101	$\bar{x}$ sd	3.80 .45	4.00 .89	-.45
ITEM102	$\bar{x}$ sd	3.80 .45	4.33 .52	-1.81
ITEM103	$\bar{x}$ sd	4.00 .00	4.17 .41	
DEVELOPMENT	$\bar{x}$ sd	**3.80** **.69**	**3.99** **.43**	**-1.73**
ITEM111	$\bar{x}$ sd	4.00 .71	3.67 .82	.72
ITEM112	$\bar{x}$ sd	4.00 .71	4.50 .55	-1.32
ITEM113	$\bar{x}$ sd	4.20 .45	3.83 1.17	.66
ITEM114	$\bar{x}$ sd	3.00 .71	3.33 1.51	-.45

df = 97
* : $p \leq .05$

APPENDIX E
Questionnaire for Student Who Evaluate the Social Science Course Material

STUDENTS' AND TUTORS' PERCEPTIONS OF COURSE QUALITY

Questionnaire

Course :

Study Program :

Regional Center:

Name:

Study Group:

UNIVERSITAS TERBUKA

June, 1992

PREFACE

The printed course material is the main learning resource in the distance education system, including the D-II study program. Readable, clear, and comprehensible course material contributes to effective course learning material which ultimately supports student success.

In an evaluation of how well course materials function as good learning materials, information about the quality of the course material from the users is necessary.

For this reason, we have chosen you as our main information resource. Please complete the questionnaire honestly, based on what you perceive to be the quality of the course material. This research will not affect your status in any way, either in tutorial activities or in your final examination results. Information given through this questionnaire will remain anonymous and confidential, and will only be used by the institution for the important task of developing course material.

Your input will be most helpful for the improvement of the quality of this course material and would be used as an important consideration in the process of making decisions for the improvement of the quality of the other course materials.

For all those who complete the following questionnaire including filling in the comment and suggestion column, and returns it, we will enter your numbers in a raffle of a T-shirt from Victoria, Canada. Please keep the attached portion, as we will draw from the numbers listed on those portions.

Good luck in becoming one of the six winners of a Victoria T-shirt. We will announce the winning numbers and send the prizes through the regional centers.

Thank you for your assistance and participation.

June, 1992
The Head of the Research Center

Signed

Dr. Aria Djalil
NIP 130 364 776

INSTRUCTIONS FOR COMPLETING THE QUESTIONNAIRE

1. Complete all the questions and statements in the General Part, Part A, and Part B.
2. You are asked to evaluate one module being studied from **the Social Science Course material.** Evaluate the module based on the criteria 1 to 10 in Part A.
3. Please read each statement in every criterion. Each statement is followed by 5 response options which indicate your level of agreement with the module condition. Circle the response which is appropriate with your judgment.
4. Choose an appropriate answer from the five response options provided for the statements in Part B.
5. Besides your judgment for the statements in Parts A and B, your comments and suggestions are also important for this research. Therefore, complete clearly every open ended question.
6. To make it easier for you to complete this questionnaire, we have attached some examples for several of the terms appearing in the questionnaire.
7. After completing this questionnaire, please return it to the tutor of this course material as soon as possible.

Thank you.

THE EXAMPLES FOR THE TERMS APPEARING IN THE QUESTIONNAIRE

1. Example of Statement of Objectives:
   " After completing your study of this module you will be able to explain ..... More specifically, after studying this module you are expected to be able to: .....".

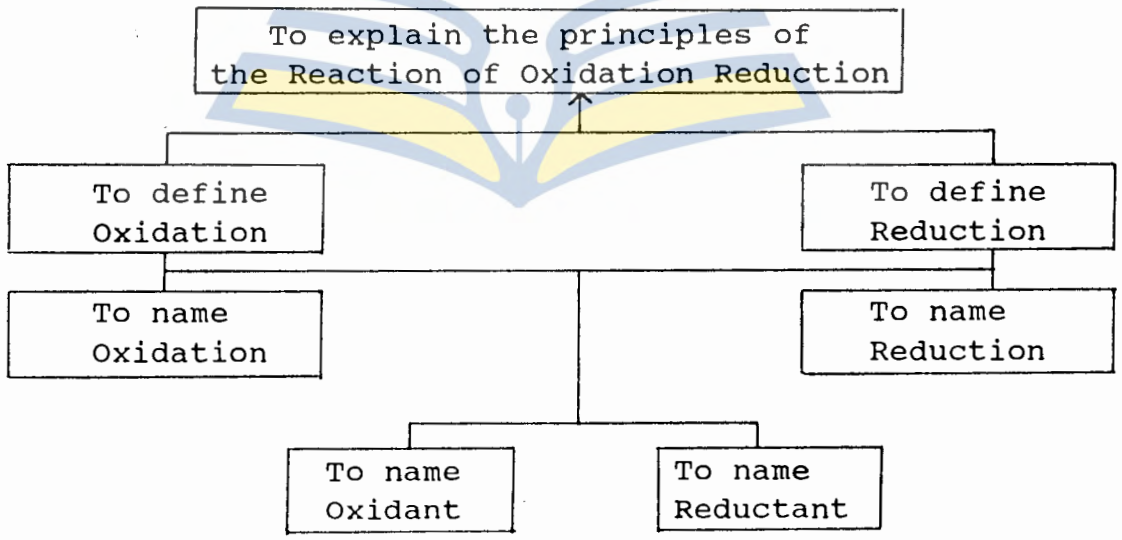
2. Example of Overview:
   In an explanation, the form of an Overview can be featured as follows:

   Learning Activity 1
   The Reaction of Oxidation Reduction

   " In Learning Activity 1 you will study about the principles of the Reaction of Oxidation Reduction. The description will begin by introducing you to the definitions of Oxidant and Reductant, and definitions of Oxidation and Reduction. Then, the definition of the Reaction of Oxidation Reduction will be described. Thereafter, you will be able to explain the principles of the Reaction of Oxidation Reduction".

   Or in a diagram, the form of an Overview featured as follows:

   Learning Activity 1
   The Reaction of Oxidation Reduction



Questionnaire

Scale:
1 = SD = Strongly Disagree
2 = D = Disagree
3 = LA = Less Agree
4 = A = Agree
5 = SA = Strongly Agree

Circle a response from a five-point continuum which indicates the degree of strength of your endorsement.

GENERAL SECTION

1. I am reading **one of the modules** in the Social Science course material.
   1. Yes
   2. No
2. The number of **the module that I read** is: 1/2/3/4/5/6/ 7/8/9/..

Part A. Module Evaluation

Focus your evaluation only to the module you read.

1. Clarity and Consistency of Objectives

	SD	D	LA	A	SA
1. The general and specific objectives are stated clearly.	1	2	3	4	5
2. The objectives reflect what the unit is about.	1	2	3	4	5
3. The objectives describe clearly what I am expected to achieve.	1	2	3	4	5
4. The objectives are consistent with content, assignments, and self-assessment.	1	2	3	4	5

Are there any comments or suggestions on the objectives on the objectives in terms of their clarity and consistency?

2. The clarity of presentation of Concepts and Principles.

	SD	D	LA	A	SA
1. The introduction to each module highlights the importance and relevance of the topics to be studied.	1	2	3	4	5
2. Learning activities are sequenced logically and systematically.	1	2	3	4	5
3. The structure of the unit is clearly related to the logic presented in the introduction.	1	2	3	4	5
4. Segments of content are clearly linked to form a whole.	1	2	3	4	5
5. Headings, boldface type, and italics help me to understand the organization of the ideas.	1	2	3	4	5

Are there any comments or suggestions for this section in terms of introduction, sequence, and the structure of units?

3. Use of Examples and Vocabulary Aids to highlight key ideas

	SD	D	LA	A	SA
1. A sufficient number of examples is provided for illustration and clarity of important ideas.	1	2	3	4	5
2. The description of an idea gives a wide range of analogies supporting content.	1	2	3	4	5
3. The examples are relevant to the discipline.	1	2	3	4	5
4. Examples are relate to real situation in real life.	1	2	3	4	5

Any other comments or suggestions for the examples and analogies given?

4. Accessibility to Information

	SD	D	LA	A	SA
1. Questions placed before, into, or after a passage of text direct me to understand certain learning objectives.	1	2	3	4	5
2. The study directions help me understand what I have to do with the material.	1	2	3	4	5
3. The study directions help me understand what is an appropriate pace to work at.	1	2	3	4	5
4. The additional materials, such as textbooks, journals are easy to obtain.	1	2	3	4	5
5. The additional materials will enrich my understanding of the modules.	1	2	3	4	5

Are there any comments or suggestions on directions given in order to help you more understand the materials?

5. Visual Presentation and Layout.

	SD	D	LA	A	SA
1. The description of content is completed sufficiently with tables, maps, charts, pictures, or photographs.	1	2	3	4	5
2. These visual aids (tables, symbols, etc) are useful for helping me understand the important ideas.	1	2	3	4	5
3. The distance of spaces and (spacing) paragraphs are suitable.	1	2	3	4	5
4. The material is visually interesting.	1	2	3	4	5

Is there anything that needs to be updated/replaced/removed from the text?

6. Overviews and Summaries.

	SD	D	LA	A	SA
1. Each learning unit gives a brief overview to show what it is about and how it relates to its context.	1	2	3	4	5
2. The summaries are relatively effective in pulling ideas together.	1	2	3	4	5
3. Summaries aid in consolidation of new learning materials.	1	2	3	4	5
4. The summaries leaves me with some interesting thoughts for the future.	1	2	3	4	5

Any other comments or suggestions for overviews or summaries given?

7. Readability in general

	SD	D	LA	A	SA
1. The writing style is sufficiently clear, enthusiastic, and supportive.	1	2	3	4	5
2. The language use simple explanations and precision.	1	2	3	4	5
3. The sentence length is varied appropriately from short to long.	1	2	3	4	5
4. The terminology used is appropriate to the discipline.	1	2	3	4	5
5. The terms used are recognizable and consistent.	1	2	3	4	5
6. The new or foreign terms appearing in the text are explained completely.	1	2	3	4	5

Are there any comments or suggestions on the writing style, sentences, or terminologies used in the text?

8. Practice Activities
Exercise, Formative-test, and Self-assignment

	SD	D	LA	A	SA
1. The exercises, formative-test, and self-assignments ask for important facts and concepts of the course.	1	2	3	4	5
2. The difficulty level was appropriate.	1	2	3	4	5
3. The exercises, formative-test, anf self-assignments help me achieve objectives step-by-step (no great leaps in difficulty).	1	2	3	4	5
4. The practice activities explicitly specify what is required of participants to accomplish.	1	2	3	4	5
5. The specimen answers provided clarify the practice activity questions.	1	2	3	4	5

Are there any comments or suggestions of the number of the test item, the difficulty level, the form of the answer, or others?

Feedback
(The comments or evaluation system given to the formative-test and self-assignment).

	SD	D	LA	A	SA
6. The form of feedback provided helps me overcome my personal difficulties to do the exercise and formative-test.	1	2	3	4	5
7. Feedback will improve weak areas of my performance.	1	2	3	4	5
8. Early assessment more inform me of my progress.	1	2	3	4	5

Should the activities be maintained, eliminated, or modified in the future?

9. General Presentation.

	SD	D	LA	A	SA
1. The density of ideas in the text is too high.	1	2	3	4	5
2. The material seems too time-consuming.	1	2	3	4	5
3. In general the text is difficult to understand.	1	2	3	4	5
4. The materials presented in the modules closely related to the materials needed to conduct my jobs in elementary schools.	1	2	3	4	5
5. The subject matter is covered in appropriate detail or depth, and valid.	1	2	3	4	5 *

Is there any comment or suggestion on the presentation of the material in general?

10. Combination of Media.

	SD	D	LA	A	SA
1. The additional materials, such as radio and audio-cassettes is needed because they provide better learning.	1	2	3	4	5
2. The use of video-cassettes will also be necessary because it provides better learning.	1	2	3	4	5
3. The support media present alternative view points and approaches.	1	2	3	4	5

Are there other comments or suggestions related to the variety of media which should be used to supplement the printed material?

Note: * = the question is only offered to tutors.

Part B. Module Development

Scale:
1 = SD = Strongly Disagree
2 = D = Disagree
3 = LA = Less Agree
4 = A = Agree
5 = SA = Strongly Agree

We expect your opinios about the following ways of module development:

	SD	D	LA	A	SA
1. **"Margin notes"** emphasize important points in the text.	1	2	3	4	5
- See the example 1 on page 154 -					
2. **"Margin indexes"** facilitate reference to new terms introduced within the text.	1	2	3	4	5
- See the example 2 on page 154 -					
3. **"Glossary indexes"** in every Learning Unit highlight the introduction of new concepts.	1	2	3	4	5
- See the example 3 on page 155 -					
4. The material presented in **two columns** is easier to read.	1	2	3	4	5
- See the example 4 on page 156 -					

Is there any comment or suggestion related to module development?

Example 1: An example of items of human interest being included in 'margin notes' to emphasise important points in the text. (Source : Managing Health Services. Book 1, The Institute of Health Services Management, NHS Training Authority, and the Open University, 1990).

Controlling time wasting

How we control time-wasting depends on who is responsible for it In the first place. It Is therefore useful to examine time -wasting under two headings according to whether it Is *time-wasting caused by other people* or *time-wasting caused by yourself.*

If time-wasting is caused by other people, it requires ruthless action in the setting up of protective barriers to protect yourself. To manage effectively you need some time every day when you can give your undivided attention to your key tasks. Interruptions will adversely affect your concentration and you r ability to think rationally. You could set aside an hour each day when you are simply 'not available'. Your secretary, if you are fortunate enough to have one, will need to block all your calls. 'Sorry, Mrs Ahmed is not available at the moment. Can we call you back?' This is a truthful and acceptable explanation which enables you to call back later at a time of your choosing. Similarly, your secretary can book appointments for the casual visitors. Better still, if the visitor is located nearby, call on him or her, that way you retain control over the length of your visit. Colleagues will soon start to respect your privacy. It becomes a status symbol, and like all status symbols it should be visible but not ostentatious.

If time -wasting is caused by yourself, then control of it is largely in your hands. There are several such forms of time-wasting to consider, so let's consider them in turn.

If you are a slow reader, you can learn how to improve your speed - although this course does not deal with the techniques. If you write slowly, try a different method. For example, a pocket dictaphone can speed up your 'writing', because it enables you to dictate your ideas rather than requiring you to write them down on paper.

Time spent socializing and on visits may be time-wasting, but this is not necessarily the case. Social chat can be a vital lubricant in helping to build networks and good relationships. However, it should not be overdone. It can be a notorious time-waster. If you want to keep visitors on the move, do not sit down. Indicate casually in your remarks that you have another appointment in x minutes . . . . . .

International Management asked a dozen senior executives to describe the particular strategies they have adopted to get on top of the time problem. Marvin Granath of Honeywell 'hides' in a conference room or an unused office until the work is done. 'I tell my secretary I'm dead', says Granath. His work completed, he emerges to tackle the urgent matters that have arisen during his absence.

David Moreau, Managing Director of Elga Products Ltd., says his biggest time-saving strategy is a daily stroll through his firm's factory where water purifying equipment is manufactured. By spending 20 minutes at the plant, he can learn at first hand if there are any problems troubling the workers. 'It saves me hours listening to others telling me what they think is going on', he says.

Telephone interruptions are one of the time-stealers which trouble top executives most. Neal Plowman, Managing Director of New Zealand Towel Services Holdings Ltd., has a very simple remedy. He keeps an egg-timer on his desk and when the telephone rings he sets it in motion. As the last grains of sand sift through the glass, Plowman winds up the conversation. 'No telephone call should be longer than three minutes', he asserts.

Example 2: An example of 'an index linked to margin notes' to facilitate reference to new terms introduced within the text. (Source: Planning for the requirement and utilisation of teachers. International Institute for Educational Planning, Paris, 1988).

2.2 Optimising the use of teachers

Once teachers have been employed it is important to ensure that the best possible use is made of their services. One of the ways in which educational planners try to help in this respect is by scrutinising teaching loads, that is the number of periods carried by individual teachers. A comparison of average teaching loads for different school systems provides planners with a useful means of highlighting discrepancies between different regions, different school systems, different schools, and even between teachers within a school.

teaching loads

Example 3: An example of 'a glossary index' to highlight the introduction of new concepts with margin notes to emphasize important points in the text.
(Source: Fundamental Statistics for the Behavioral Sciences. PWS-KENT Publishing Company. Boston, 1989).

5

MEASURES OF CENTRAL TENDENCY

In Chapter 3 we saw how to display data in ways that will allow us to begin to draw some conclusions about how the data look. Plotting data shows us the general shape of the distribution and gives a visual sense of the general magnitude of the numbers involved.

Measures of central tendency
Numerical values referring to the center of the distribution.

In this chapter we will see several statistics that we can use to represent the "center" of the distribution. These statistics are called **measures of central tendency**, which is a fairly descriptive label. In the next chapter we will go a step further and look at measures dealing with how the observations are scattered around that central tendency, but first we must address the prior question of identifying the center of the distribution.

There are three common measures of central tendency (mode, median, and mean), and they will be discussed in turn. We will begin with what is probably the least used (and least useful) measure.

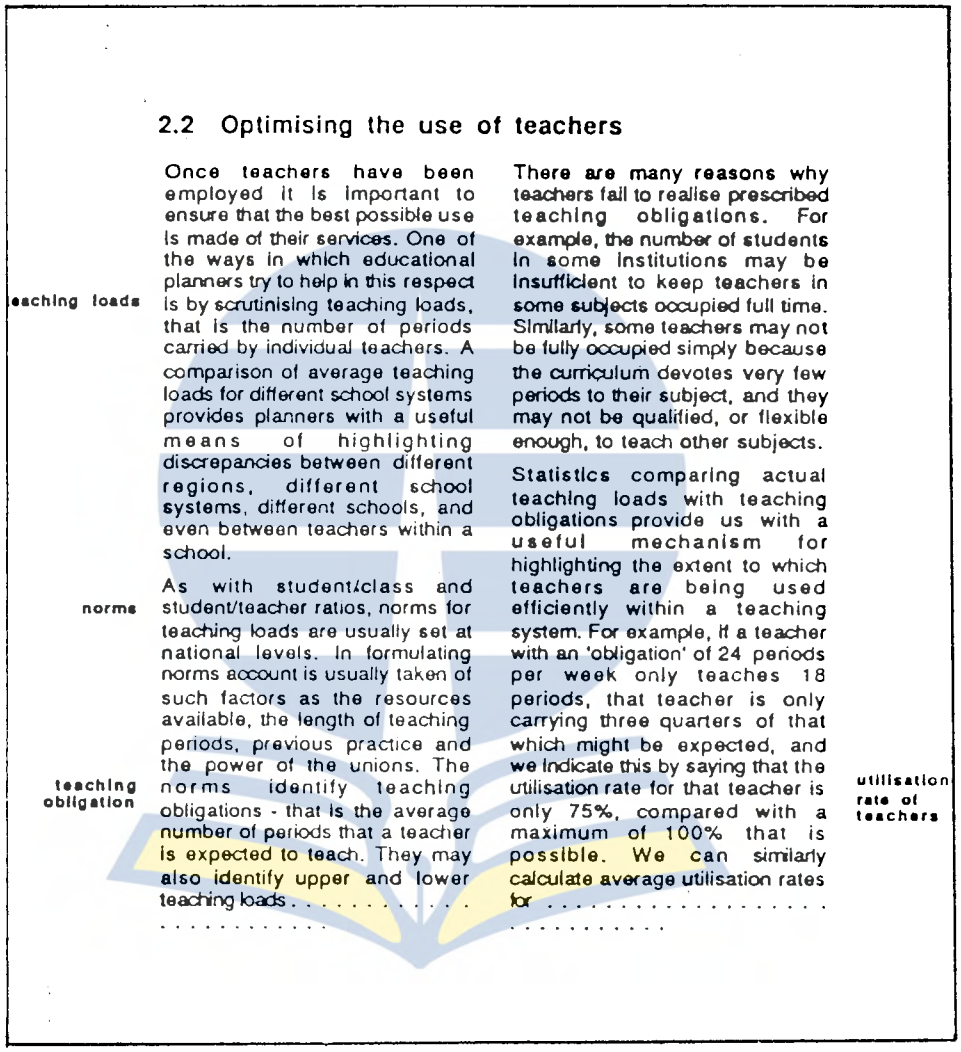
5-1 THE MODE

Mode (Mo)
The most commonly occurring score

The mode (Mo) can be defined simply as the most common score—that score obtained from the largest number of subjects. Thus the mode is that value of Y corresponding to the highest point on the distribution. In the example in Chapter 3 dealing with ratings of the desirability of a proposed student center (Table 3-1) this value is 6, since more people rated the center 6 than assigned it any other single numerical value.

If two *adjacent* ratings occur with equal (and greatest) frequency, a common convention is to take an average of the two values and call that the mode. If, on the other hand, two *nonadjacent* ratings occur with equal, or at least approximately equal, frequency, we would say that the distribution is bimodal, and we would most likely report both modes. Thus, for example, the electronic game data is roughly bimodal, with peaks at 0–9 and 40–49 minutes. (You might argue that it is trimodal with a peak at 120+, but since that is a catch-all interval for "all other values," it probably does not make much sense to think of it as a modal value.)

Example 4: An example of 'a two column layout' with margin notes highlighting the introduction of new concepts. (Source: Planning for the reqruitment and utilisation of teachers. International Institute for Educational. Paris. 1988).



2.2 Optimising the use of teachers

teaching loads

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norms

As with student/class and student/teacher ratios, norms for teaching loads are usually set at national levels. In formulating norms account is usually taken of such factors as the resources available, the length of teaching periods, previous practice and the power of the unions. The

teaching obligation

norms identify teaching obligations - that is the average number of periods that a teacher is expected to teach. They may also identify upper and lower teaching loads . . . . . .

There are many reasons why teachers fail to realise prescribed teaching obligations. For example, the number of students in some institutions may be insufficient to keep teachers in some subjects occupied full time. Similarly, some teachers may not be fully occupied simply because the curriculum devotes very few periods to their subject, and they may not be qualified, or flexible enough, to teach other subjects.

Statistics comparing actual teaching loads with teaching obligations provide us with a useful mechanism for highlighting the extent to which teachers are being used efficiently within a teaching system. For example, if a teacher with an 'obligation' of 24 periods per week only teaches 18 periods, that teacher is only carrying three quarters of that which might be expected, and we indicate this by saying that the utilisation rate for that teacher is only 75%, compared with a maximum of 100% that is possible. We can similarly calculate average utilisation rates for . . . . . .

utilisation rate of teachers

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