A STUDY IN INFORMATION SEEKING AND USE BEHAVIORS OF RESIDENT STUDENTS AND NON-RESIDENT STUDENTS IN INDONESIAN TERTIARY EDUCATION

by

Paulina Pannen
Dra., IKIP Jakarta, Indonesia, 1984
M.L.S., Syracuse University, 1987

ABSTRACT OF DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Education
in Instructional Design, Development, and Evaluation
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ABSTRACT

Employing the Sense-Making approach and the Micro-moment Time Line interview, this study was intended to tap the information seeking and use behaviors of resident and non-resident university students in Indonesia.

Twelve variables were investigated: (1) the range of students' questions (description, nature, and focus of questions); (2) the expected and actual uses of answers; (3) the strategies employed to get answers; (4) the sources used for getting answers; (5) the reasons for not actively trying to get answers; (6) whether or not the questions were answered; (7) the time for obtaining answers; (8) the degree of being active; (9) the effort expended to get answers; (10) the perceived importance in getting answers; (11) the perceived completeness of the answers; and (12) helpfulness of the answers. Failure analysis of students' problems when their questions remained unanswered was also performed.

The data were gathered from 69 resident and 76 non-resident university students in Jakarta and Ujung Pandang, Indonesia. The results were responses to 1072 questions. The analysis was done using content analysis and descriptive statistical analysis.

The findings indicate that there are similarities and differences in the information seeking and use behaviors of the two university student groups in academic and

bureaucratic situations. In academic situations, both student groups reported concerns with academic support, and also problems in understanding the course content and in studying independently. In bureaucratic situations, both student groups reported problems in finding directions and understanding the registration procedures, grading system, and academic regulations and procedures. A notable concern about the availability and distribution of instructional materials and other forms was reported by non-resident students. Furthermore, both student groups reported feelings of inadequacy about themselves, their academic ability, and their information seeking strategies. Also, students' reliance on friends and institutional personnel as information sources was noted.

Based on the findings, recommendations are offered to educators, administrators, and information system designers to serve as a framework in designing and improving the information systems in both conventional and distance education universities, particularly in Indonesia. Some limitations of the study are discussed, and further studies that would yield more generalizable results are also recommended.

2

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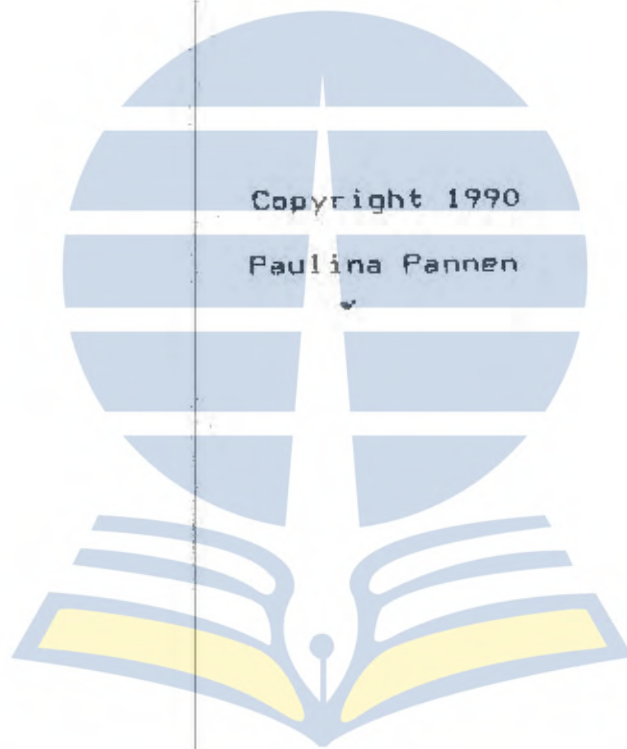in the School of Education at Syracuse University

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i

ii

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iii

iv

CONTENTS

v

viii

ix

LIST OF TABLES

x

xi

CHAPTER ONE

Introduction

Background of the Study

Improvement of the human mind with its potential powers of rational thought, its ability to create or discover knowledge, and its normative heritage, is the key to human progress (Fagerlind and Saha, 1983). Fagerlind and Saha (1983) also state that:

Cognitive development and the pursuit of knowledge are essential not only for the survival, but also for the advancement of the society itself. Education, as a formal and deliberate process by which the cultural and normative heritage of a society are transmitted from generation to generation, and through which that heritage is improved through scientific discovery, indeed has contributed to changes and development in the society. Education comes to be viewed as an important and "crucial" agent in the development of all dimensions of modernity of a nation. (p.32)

The basic assumption about education and its link with national development is its role in creating a skilled and viable workforce. Fagerlind and Saha (1983) point out that

a more educated population is assumed to include sounder and more productive decision makers, and to have the attitudes and behavior conducive to characteristics of a sustainable modern economy and high quality of life: the professed goal of development strategies.

In this study, the term educational institution specifically refers to the formal education institution. This is to distinguish it from other forms of education such as informal education and nonformal education. Coombs, Prosser, and Ahmed (1973) define the three education forms as follows:

- **Informal education:** the lifelong process par excellence, whereby each individual acquires attitudes, values, skills and knowledge through everyday experience, through the educational influences and resources of his or her environment, namely family, neighbors, workplace and leisure, in the market, the library and through the mass communication media.

- **Formal education:** the "educational system" with its hierarchic structures and chronological succession of grades, from primary school to university, which in addition to general academic studies comprises a variety of specialized programmes and full-time technical and vocational training institutions.

- **Nonformal education:** all those educational activities that are organized outside the established formal

system — whether functioning separately or as an important part of a broader activity — and designed to serve identifiable clientele and educational objectives.

In many countries, the most recent trend in education is the emerging practice of distance education or "non-resident" education as a component of the education system (Keegan, 1986). In contrast to conventional education which is oral and group-based, uniting instructors and students in one location (a classroom, a school or a campus), distance education is characterized by the separation of the instructors from the students who are dispersed throughout the region. The implication of the emerging distance education system is that there is a growing emphasis on self-instruction on the part of the learners (Fernig, 1980), which in turn, gives rise to the need of students for information to support their self-learning process and for means to meet those needs.

Information and Educational Institutions

Over the years, information and informing have become recognized intrinsic parts of human life everywhere. It is said that information has high economic and political value which further becomes a means of national development. An educational institution, be it a conventional university

(resident university) or the new emerging distance education university (non-resident university), is one of the most notable institutions that deals with information as the very substance of its activities. The purpose of an educational institution is to facilitate the transfer of information, whether it be (1) discipline-oriented information, (2) mission-oriented information, or (3) problem-solving information, from one generation to another. Information, therefore, represents the essence of educational activities and plays a crucial role for the educational community (Fernig, 1980).

Educational activities can be viewed as dialectical processes of building up knowledge through learning experience (Unesco:IIEP, 1983), which involves two categories of actors: the system, including the instructors, the administrators and system experts as the information providers, and the students as the users of the system. This dialectical process is facilitated primarily by a two-way communication channel or access between the system and the students.

In such a dialectical process of education, information is the concern not only of the educational system, but also of the students who use information as the very substance of learning. As students proceed through the educational process, they interact with the system or the educational institution. In such a process, they may find themselves in

a situation where they must follow bureaucratic regulations, make bureaucratic decisions (e.g., paying tuition, adding/dropping a course, etc.), answer bureaucratic questions, locate offices, solve bureaucratic problems, or understand something in order to better understand how the education system works. In so doing, they seek and use or attempt to seek and use the supporting bureaucratic (system-oriented) information (Robinson, 1981).

The students also interact with the subject area that they are learning. As students proceed through the learning process in any education system, they may find themselves in situations where they must memorize content, make decisions, answer questions, locate a fact, solve problems, or understand something in order to better relate to the subject area they are studying. This interaction underlies the students' active seeking and use of the supporting academic (course-related) information (Robinson, 1981).

Furthermore, students also interact with themselves as human beings and with their fellows as social entities. Whenever problems occur in this interaction, they seek or attempt to seek advisory information, usually through the counselling services (Robinson, 1981).

These interactions between the students and the system demonstrate that students have information needs, some of which they know about and some of which they are unable to specify precisely in order to resolve a problematic

situation ("anomalous state of knowledge": Belkin, Oddy, and Brooks, 1982). At the same time, the information system may have some knowledge of those needs, so that it can monitor those demands and anticipate the queries and types of information needed. In an ideal world, there would be a match between the information needs of the users and the knowledge of these needs on part of the providers.

Much of what has been invested in the present practice of developing information systems in educational institutions, is based on the research that illustrates the system's perspective in providing information for the students. However, what the system perceives as the students' information needs may not be what the students themselves perceive as their own information needs (James, 1983). Educators, administrators, and system designers tend to design information systems according to their own a priori perspectives, criteria, and views of the world (Rohde, 1986), which might be different from the students' perspectives, criteria, and views as the system's users. Even when educators, administrators, and system designers believe they know what the students' needs are, expertise alone is not sufficient to understand the full range of students' information needs. The claim is increasingly being made that information systems as currently designed, based on system's expertise perspective, are encountering difficulties meeting the needs of their users (Dervin, 1977;

Rohde, 1986; Taylor, 1986). In addition to the system's expertise and perspective, the users' perspective of their own information needs must be considered when designing an information system in an educational institution (Taylor, 1986). However, the users' perspective according to the existing paradigm is not the same as the users' perspective as defined by the emerging alternative paradigm in information system design (Dervin and Nilan, 1986). Though many studies, which incorporate the user's perspective, have been done in information system design, few that incorporate and use the users' perspective and its theoretical constructs the same way has been completed.

Information Seeking and Use Environment

An information need arises whenever the individual students find themselves in a situation when movement stops and gaps begin to emerge. At that point in time, their ability to make sense of the situation is constrained (Dervin, 1983). In order to bridge the gap and to continue moving across time and space, they seek and use or attempt to seek and use specific information.

The term information needs is defined in this study as the combination of information seeking and information use. In some studies, information seeking and use is called "information needs," while in others, it is called "information requirements." The basic difference between

"information needs" and "information requirements" is discussed by Dosa (1988) as follows:

   - **information needs** are needs for data, expertise and resources which the individual users are not aware of,

   - **information requirements** are needs for data, expertise and resources which the individual users are aware of.

In this study, the term information needs, as a combination of both information seeking and information use, denotes the notion of users' awareness of their needs for data, expertise, and resources. It is seen as an individual constructing activities -- an individual creating sense at specific moments in time-space (Dervin, 1983).

   Situation, in this case, means the time-space context in which individuals experience problems, make an effort to solve problems, and create sense out of the problems. Situation is seen as ever-changing over time.

   Movement means the progress of an individual from one point in time to another point in time and from one place to another place.

   Gap is defined as a problematic situation, an anomalous state of knowledge (Belkin, Oddy and Brooks, 1982), a state of uncertainty (Kirkelas, 1983), a situation in which an individual is trying to make sense out of something (Dervin, 1983). Conceptually, a gap represents an opportunity for

information to help the individual to continue on her/his way.

Information, in this case, is that which informs and provides help for an individual to bridge her/his gap. Information is that which allows an individual to make sense out of a situation. However, information is not the bridge in itself; it is the individual who gives meaning to information and decides whether it can be utilized to help her/him to bridge the gap.

Use is conceptualized as the way in which an individual puts information to work.

The time-space dimension involves the notion of past (where an individual was), present (where an individual is), and future (where an individual will be) in the ever-changing environment surrounding the individual. This dimension demonstrates that information needs differ from moment to moment and from situation to situation (Dervin, 1979).

Although it is acknowledged that students' experience, needs, and knowledge in moving across time and space in an educational process are subjective to some degree (each student views reality through her/his own eyes — individuality), there are also great similarities among the situations encountered by different individual students which allow the generation of patterns of information needs. Thus, there is a degree of intersubjectivity which allows

for the identification of the generalizable patterns of the
students' information needs, while at the same time allowing
for the recognition of individual differences in information
needs.

To fulfill their information needs in an educational
process, the individual student usually seeks and uses or
attempts to seek and use a variety of information sources
which are expected to be available from the formal and
informal information systems in any educational system. In
order to limit the scope of the study, however, this study
deals only with students information seeking and use of
academic (course-related) information and bureaucratic
(system-oriented) information which are provided through the
formal information system by the educational institution to
support the students' learning process. Furthermore, this
study does not cover the informal information system,
informal social processes and channels of information
acquisition and exchange as illustrated in, among other,
studies of invisible colleges (i.e., Cronin, 1982), the
utilization of knowledge (Paisley, 1983), the diffusion of
innovations (Rogers, 1983). Nor does this study cover the
formal national information systems of any country.

The most common information system provided by an
educational institution to support students' learning
process is the library. The library has been a popular
information system which provides primarily academic

information for students in both conventional and distance education systems. In addition, there have been academic advisors, peer tutors, teaching assistants, etc., who usually also provide academic information for students in a conventional education system. Students in a distance education system usually have only tutors to provide them with academic information. Additional sources such as learning/study groups and learning resource centers are sometimes provided for non-resident students.

Bureaucratic information is usually handled by an administrative office in most education systems. The most common delivery channels for this bureaucratic information are the university catalog and booklets providing information on university regulations, tuition, financial aid, student services, health services, etc. These publications may be available in the library collection, but they are more often available from the administration office, departmental office, and/or other university offices. In a distance education system, these publications are usually mailed to students. In addition, in a distance education system, some bureaucratic information is broadcast through national/local radio stations and television, and printed in national/local newspapers.

Although both conventional and distance education systems have provided a variety of information sources to support their students' learning and educational progress,

the literature has maintained that resident students have more advantages than the non-resident students in terms of information provision and access to a variety of information sources to support their studies. Resident students within a conventional education system are united with their teacher, administrators, and supporting materials and services in one location. Resident students come to their campus to obtain face-to-face guidance from the instructors and administrators, and they have access to resources supporting their academic needs which include tutors, libraries, laboratories, and studios. They also have access to materials that support their bureaucratic information needs such as university regulation booklets, course selection guidelines, financial aid, and course schedules. Moreover, resident students have the advantage of making regular formal and informal contact with their fellow students and their teachers or instructors, as well as with a wide range of information resources available on location.

In contrast, non-resident students are separated, often by considerable distance, from the institution, so that they lack the regular formal and informal contacts with fellow students and with tutors that are so valuable for meeting information needs. Because of socioeconomic and/or technological problems, they do not always have the opportunity for the "experimental" discussion with peer groups and/or instructors that could provide direct and

immediate resolution to their information needs. Thus, they face not only the problems of resident students, but also those generated by the non-resident educational system itself. Furthermore, they have few information systems whose primary concern is to serve their needs (Wilson, 1978).

While non-resident education systems are becoming more acceptable everywhere, an information system that would address the needs of non-resident students has not received much attention, either because of the educational system's attitudes, inadequate financial resources, or the lack of the educational system's expertise of how an information system for non-resident students can be designed (Fisher, 1982). The existing information systems in educational institutions are primarily oriented toward the resident students. For example, the lack of understanding of the needs of non-resident students (in United States) is demonstrated by a statement of the Association of College and Research Libraries (ACRL Guidelines 1967:51-52), which claims that the needs of non-resident students are similar to those of all other students. Within such a framework, educational institutions seldom question whether or not the existing information system for resident students will also be suitable for non-resident students.

If both conventional and distance education systems are to help students progress through their studies, they must

provide information which meets the students' needs and supports the learning process. What is the range of information needs of the resident students in their studies? What is the range of information needs of the non-resident students in their studies? Will there be any differences or similarities between the information needs of these two groups? Will an optimal information system for non-resident students be the same as the information system for resident students? or will it be different?

Such questions point to the need for study of the students' information needs and for a coherent understanding of their information seeking and use behaviors. Such study is expected to provide guidance for conceptualization and design of information systems in either a conventional university or a distance education university. The study should be useful for designing a new information system as well as for improving the existing information system in order to better serve the students' information needs.

Problem Statement

Focus of the Study

This descriptive study investigates the role of information in the process of learning within formal educational institutions in Indonesia. Specifically, it looks at information seeking and use behaviors of students in formal education institutions at the tertiary level in both conventional and distance education university settings.

The objective is to describe differences and similarities of the information seeking and use behaviors from the users' perspective of both resident students in a conventional university and non-resident students in a distance education university in Indonesia. It is directly concerned with the practical issues of who gets what information, from where, how and why, in both academic and bureaucratic situations. Implicitly, it is also concerned with the issue of the way the current information system works in fulfilling the students' information needs, i.e., which parts are working well and which parts are not working as perceived by the students.

Specifically, this study will:

1. Identify patterns of information seeking and use behaviors of resident university students in both academic and bureaucratic situations;

2.   Identify patterns of information seeking and use
      behaviors of non-resident university students in both
      academic and bureaucratic situations; and

3.   Describe differences and similarities between the two
      groups.

Main Issues

In the form of research questions, the inquiries
guiding this study are:

1. What are the information seeking and use behaviors
   of resident university students?

2. What are the information seeking and use behaviors
   of non-resident university students?

3. What are the differences and similarities between
   the information seeking and use behaviors of
   resident and non-resident university students?

Question 1:   What are the information seeking and use
              behaviors of resident university students?

The focus of this question is the identification,
description, and explanation of the information seeking and
use behaviors of resident university students in regard to
bureaucratic (system-related) information and academic
(course-related) information. For the purpose of this
study, bureaucratic information means information about the
education system, bureaucracy and administration of the

student's study program, e.g., tutorial, course schedule, exams schedule, tuition, students services, etc., and academic information means information about the subject area of the student's study program, the course content, study program requirement, content coverage of exams, a specific lesson, etc. The question is also concerned with describing from the students' perspective the interaction between resident students and the university's existing information system. This phase explores the range of questions which resident university students might have in a problematic situation, the degree of importance of the questions, the expected and actual use of the answers, and the efforts, strategies, and sources utilized by the students in attempting to find answers to their questions.

Question 2:   What are the information seeking and use behaviors of non-resident university students?

The focus of this question is the identification, description, and explanation of the information seeking and use behaviors of non-resident university students, with respect to bureaucratic (system-related) information and academic (course-related) information as defined above. It also describes from the students' perspective the interaction between non-resident students, and the university's existing information system. This phase explores the range of questions which non-resident

university students might have in a problematic situation,
the degree of importance of the questions, the expected and
actual use of the answers, and the efforts, strategies,
access, and sources utilized by the students to find answers
to their questions.

Question 3:   What are the differences and similarities
              between the information seeking and use
              behaviors of the resident and non-resident
              students?

This issue concerns the differences and similarities
between the information seeking and use behaviors of the two
student groups in questions 1 and 2. The problems
encountered in the interaction between existing information
systems, and the students were also identified.
Implications of the differences and similarities for the
design of information systems are discussed.

Within each main issue, there are twelve variables
being investigated:

1. the range of students' questions (description of
   questions, nature of questions, and entity focus of
   questions);

2. the expected and actual uses of answers to students
   questions;

3. the strategies employed to get answers to questions,

4. the sources used for getting answers to their questions;

5. the reasons for not actively trying to get answers to questions;

6. the number of questions being answered;

7. the time of answers obtained;

8. the degree of students being active in trying to find answers to their questions;

9. the effort expended to get answers to questions;

10. the perceived importance of getting answers to questions;

11. the perceived completeness of answers obtained; and

12. the perceived helpfulness of answers obtained.

Significance of the Problem

While it is assumed that a distance education or non-resident education system has certain characteristics, a structure, and a conceptual framework that are different from those of a conventional education or resident education system (Kaye and Rumble, 1981), information provision for non-resident students is often patterned on the system designed for resident students because, as mentioned earlier, institutions believe that the information needs of non-resident students are similar to those of resident students. While there is a vast body of literature in the general area of information needs and users, it appears that

up to the present no attempt has been made to investigate whether or not the information seeking and use behaviors of non-resident students are different from those of resident students.

It is the purpose of this study to look intensively into differences and similarities of information seeking and use behaviors of resident and non-resident university students in Indonesia as perceived by the students themselves. The results of this study should also reveal insight about the way the present information system works to fulfill the students' information needs. The results of this study should be useful to the educators, administrators and system designers of both conventional and distance education systems, particularly in Indonesia, serving as a framework for the design of information systems sensitive and responsive to the students' information needs based on the observed differences and similarities in the information seeking and use patterns of the two groups.

Distance education as a field has by now been established both in research and university teaching, and much has been achieved since the first scholarly studies of distance education were published (Holmberg, 1988). However, acknowledging the fact that distance education is at present playing a role of growing importance in the educational and national development of many countries, there is undoubtedly a great need of more fact finding about

distance education. Holmberg (1988) further states that
only with a reliable factual background it is feasible to
relate value judgments, traditions and practice to one
another in a fruitful way in the field of distance
education. The statement explicitly calls for the attention
of educational researchers and scholars to further
investigate the issue of distance education, its role in
educational and national development, including the issue of
the information provision as one of the essential student
support services in distance education.

Definition of Terms

This study approaches the subject of information
seeking and use behaviors applying a basic terminology as
described below. These definitions have been selected for
the purpose of the current investigation. No claim is made
that these meanings are exclusive in the literature.

Information

One definition of "information" given by Webster's
Dictionary (1983) is something received or obtained
through informing, such as knowledge communicated by
others or obtained from investigation, study, or
instruction, knowledge of a particular event or
situation, facts or figures ready for communication or
use as distinguished from those incorporated in a

formally organized branch of knowledge, or a signal.
The verb "to inform" also denotes among other meanings,
the process of "giving form or shape" to something
(Dosa, 1988). Although many different definitions are
available in the field, this study will combine the
definition of information given by Faibisoff and Ely
(1976) with Dervin's notion of information (1982,
1983). According to Faibisoff and Ely (1976),
"Information is a set of symbols which has the
potential for meaning". Dervin (1983) states that "...
information is that which informs, and provides only an
incomplete rather than complete description of reality.
It is the individual who makes sense of the
information, gives meaning, constructs reality and
decides the utility of the information in a given
situation." Thus, information is that which allows an
individual to make sense out of a situation.
Therefore, information is a user construct rather than
an observer construct, and is subjective. Furthermore,
it is essentially internal, a part of an individual
frame of reference rather than an object which exists
externally (Dervin, Jacobson & Nilan, 1982). In this
study, information is operationalized as answers to
questions, whether the answers are perceived to be
complete or partial, that will provide help(s) for
individual students.

Information seeking and use behaviors are behaviors of
    individuals which are seen as "constructing"
    activities--an individual creating sense at specific
    moments in time-space (Dervin, 1983).

Resident students are students who attend a conventional
    university which provides face-to-face campus meetings.

Non-resident students are students (in the same area of
    study as resident students) who are matriculated in a
    distance education university.

Academic information is information about the subject area
    of the student's study program, the course content,
    study program requirement, content coverage of exams,
    a specific lesson, etc.

Bureaucratic information is information about the education
    system, bureaucracy and administration of the student's
    study program, e.g. tutorial, course schedule, exams
    schedule, tuition charges, students' services, etc.

Distance education is defined as a form of education
    characterized by:
        - the quasi-permanent separation of teacher and
        learner throughout the learning process;

- the influence of an educational organization both in the planning and preparation of learning materials and in the provision of student support services;

- the use of technical media; print, audio, video or computer to unite teacher and learner and to carry the content of the course;

- the provision of two-way communication between the students and a supporting organization, so that the student may benefit from or even initiate dialogue;

- the quasi-permanent absence of the learning group throughout the learning process so that people are usually taught as individuals and not in groups, with the possibility of occasional meetings for both didactic and socialization purposes. (Keegan, 1986)

In this study, the term distance education is used interchangeably with the term "non-resident education system". Furthermore, it is limited to distance education at the tertiary level, i.e., distance education university, or non-resident university.

Conventional education is defined as an education system which unites the teacher, the students and the supporting services in one locality, is able to provide

direct, immediate, and personal two-way communication between teacher and students; and is oral and group-based. In some cases a variety of instructional media may be used as a teaching aid in the classroom, laboratory, or media center. In this study, the term conventional education is used interchangeably with the term "resident education system". It is limited to conventional education at the tertiary level: i.e., conventional university or resident university.

System-oriented approach or the "traditional paradigm" as used in this study is an approach in which information is seen as objective and users are seen as input-output processors of information. It is an approach that searches for trans-situational propositions about the nature of the use of the information system by focusing on externally observable dimensions of behavior and events, such as how much use people make of the information system, and demographic and observable sociological dimensions of people as predictors of information use (Dervin and Nilan, 1986). It imposes and focuses research questions on the system elements. It treats the users as the mechanistic and passive receivers of information set up by the system. The system-oriented approach is an approach to the design of the information system by concerned experts and it

is presented fait accompli to users (discussed further in Chapter 2).

<u>User-perception approach</u> or the "alternative paradigm" as used in this study, is an approach which posits information as something constructed by human beings, sees the users as beings who are constantly constructing, as beings who are free (within the system constraints) to create from systems and situations whatever they choose, and focuses on understanding information use in particular situations (Dervin and Nilan, 1986). More importantly, it focuses on the user and examines the system only through the users' perceptions. It treats the user as the constructivist and active actor in information seeking and use. The user-perception approach is an approach to the design of the information system with users conceptualized as part of the system (discussed further in Chapter 2).

Summary

This study investigates the information seeking and use behaviors of resident and non-resident university students in Indonesia. Understanding information seeking and use behaviors of the information users (in this case the resident and non-resident university students), as perceived by the users themselves, is considered essential as a

complement to the system organization and content structure in developing and improving an information system to better serve the users' information needs, and to avoid the mismatch between the system and the users' perceptions. This condition applies to the newly emerging distance education system, which often bases its materials on the existing conventional education system.

Three major questions guiding this study are:

1. What are the information seeking and use behaviors of resident university students?

2. What are the information seeking and use behaviors of non-resident university students?

3. What are the differences and similarities between the information seeking and use behaviors of resident and non-resident university students?

Within each question, there are twelve variables being investigated. This study may reveal insight about the way the present information system works to fulfill the students' information needs. It is also expected that the results of this study are useful to the educators, administrators and system designers in the conventional and distance education systems, particularly in Indonesia, to serve as a framework for the design of an information system sensitive and responsive to the students' information needs.

CHAPTER TWO

Literature Review

Since the 1960s there has been a growing body of literature, both conceptual and empirical, on information seeking and use behaviors in many subject areas and settings. Since 1966, there has been a special section on "Information Needs and Uses" published in the Annual Review of Information Science and Technology almost every year. However, it was not until the late 1970s that a new approach to studying information seeking and use behaviors was introduced. From that time on, the literature then diverged in two directions: (1) literature about the old "system-oriented approach" or the "traditional approach," and (2) literature about the new "user-oriented approach" or the "alternative approach" (in this study: "user-perception approach").

Incorporating the literature both about the "system-oriented approach" and the "user-perception approach", this review attempts to discover (1) viewpoints and perspectives that will be useful for guiding the development of this study; (2) whether similar studies have been conducted using either the system-oriented approach or the user-perception approach; (3) factors that should be considered in a study of information seeking and use behaviors; and (4) methodological considerations in conducting such studies.

especially with the introduction of the user-perception approach in addition to the system-oriented approach. The literature was selected from Educational Resources Information Center (ERIC) searches, a search of the library literature, including Library and Information Science Abstracts (LISA); reference lists of the existing reviews on information seeking and use behaviors, and articles by persons active in the field. Nevertheless, the reviewer is aware of the likelihood of having missed several valuable works. This especially applies to the literature of the general field of information needs, which has grown exponentially within the last three decades.

In an attempt to provide a comprehensive review of the literature relevant to this study, this review will be divided into three major sections: first, Information Seeking and Use Behaviors; second, the Distance Education University and Information Provision; and third, the Conventional University and Information Provision.

Information Seeking and Use Behaviors

Information and information needs have been proven to be elusive terms. Ford (1977) and Crawford (1978) state that they are difficult to define, isolate, and measure. The various definitions of information have been reviewed by Belkin (1978), Levitan (1980) and Wilson (1981). In summarizing these efforts of previous researchers, in 1986

Dervin and Nilan point out that "information" has been defined as (1) a property of matter; (2) any message, document, or information resource; (3) any publicly available symbolic material; or (4) any data. Furthermore, the term "information needs" has been defined as the demands or conscious wants of users (Menzel, 1966); or a state of needing information, data, expertise and resources (Chen & Hernon, 1980 as cited by Dervin & Nilan, 1986).

Discussion and argumentation about the definitions of both terms - information and information needs - continue up to the present. Although much attention has been paid to the definitional problem of these two terms, the progress towards some theoretical understanding of the concepts has been slow and the problems remain unsolved (Wilson, 1981), because both terms tend to change from time to time and are considered dynamic (Rouse and Rouse, 1984). However, for the purpose of this study specific definitions (as set forth earlier) will be used in order to set the operational boundary for the investigation.

In this study, the bottom line of the notion of information seeking and use behaviors is that people, as they move through time and space, find themselves in situations where they must make a decision, answer questions, locate a fact, solve a problem, or understand something in order to continue moving. This is considered the time when movement stops and gaps begin to emerge

(Dervin, 1983). In order to bridge the gaps and continue moving across time and space, they use or attempt to use a variety of information sources (Chen & Hernon, 1982). Each information system is designed and operated to meet the information needs of some defined group of users such as students, teachers, researchers, or scientists. Taylor (1986) claims that this condition places an obligation on the information system designers to know something about the users' information needs. Logically, prior to the design and implementation of an information system, it is a basic requirement that information providers and system designers understand the basis upon which the users seek and use information (Nilan, Peek & Snyder, 1988).

Since the 1960s a considerable body of literature that illustrates and analyzes many aspects of information seeking and use has grown. Numerous studies have addressed the information seeking and use behaviors of selected populations such as scientists, physicians, chemists, engineers, patients, students and library users in a variety of contexts such as public libraries, academic libraries, research libraries, information centers, hospitals, and offices in both developed and developing countries (Faibisoff & Ely, 1976; Ford, 1977; Martyn, 1974; Rohde, 1986; Stone, 1982; Zweizig & Dervin, 1977). Numerous literature reviews have also been done, be it in the general area of information needs, or in a specific subject area or

geographical location such as in the humanities (Stone, 1982), in the social sciences (Line, 1971), in the United Kingdom, or in the United States.

Past studies about users' information needs have resulted in some generalizations to guide information system designers in designing and improving their information systems. Since this review is not intended to replicate the effort of past reviewers in elaborating each study in the area of information needs, only some general findings are presented and discussed.

Supporting Wilson (1981) who describes information need as a process of decision making, problem solving, or resource allocation, Rouse and Rouse (1984) claim that information need - seeking and use - are not an end in themselves. Furthermore, information is only a means to assist users in making decisions, solving problems or locating resources (Faibisoff & Ely, 1976; Rouse & Rouse, 1984).

There are some important factors influencing the users' information needs, which Allen (1969) called "the model of influential factors." The most common types are the individual characteristics and attributes which include experience, seniority, educational level, cognitive styles, and individual orientation (Ford, 1980; Mick, Lindsey & Callahan, 1980; Paisley & Parker, 1966; Penland, 1975; Warner, Murray & Palmour, 1973). The users' behavior and

personal preferences, i.e., hobby, personal interest, and
leisure time activities also play roles in determining the
users' information needs (Mick, Lindsey & Callahan, 1980).
However, most studies state that the most important factor
that influences the users' information needs is the users'
profession (called "concentric circular" by Paisley, 1968),
including professional activity, subject matter area,
professional interest, professional habit, and working
environment (Advisory Council on Scientific Policy of the
United Kingdom, 1965; Brember & Leggate, 1982; D'Elia, 1980;
Gains, 1978; Latham, 1984; Mick, Lindsey & Callahan, 1980;
Wilson & Masterson, 1973).

Some studies show that in order for the users to seek
and use information, they must first be aware of the
information services and provision available in their
environment (Pringgoadisuryo, 1984; Rieger & Anderson,
1968). The users' information needs are also influenced by
the range of content coverage available in the information
system, including kinds, amount, and update rates (Brember &
Leggate, 1982; Chen & Hernon, 1982; Gains, 1978; Groark,
1974; Hoffman-Pfeffer, 1987; Kernaghan et al., 1979; Lane,
1966; Pringgoadisuryo, 1984; Wilson & Masterson, 1973).

Factors that determine the frequency of use of the
information services or specific information sources
(Advisory Council on Scientific Policy of the United
Kingdom, 1965; Barkey, 1965; Brember & Leggate, 1982;

Fisher, 1977; Gains, 1978; Groark, 1974; Kernaghan, et al., 1979; Lane, 1966; Latham, 1984; Masterson & Wilson, 1975; Wilson & Streatfield, 1977) are the user's perceptions of the difficulty involved in using the information system, including payoffs, costs, and risks (Carter, 1967; Brember & Leggate, 1982; Gains, 1978; Groark, 1974; Latham, 1984; Masterson & Wilson, 1975; Pringgoadisuryo, 1984), availability of channels/access to the information system, including both formal and informal channels (Chen & Hernon, 1980; Fisher, 1978; Gains, 1978; Groark, 1974; Kenney, 1966; Mick, Lindsey & Callahan, 1980; Orton & Wiseman, 1977), and availability of multiple sources in the users' environment (Mick, Lindsey & Callahan, 1980; Orton & Wiseman, 1977; Tjiptopranoto, 1979).

While the above mentioned findings are specific results or conclusions of individual studies, some literature reviews have had far-reaching results on the design, implementation and improvement of information systems. The literature reviews of information needs and uses have generated some other valuable findings for practical and theoretical purposes. In addition to the issue of "conceptualization", the most intriguing finding in most reviews published in the <u>Annual Review of Information Science and Technology</u> (ARIST) to date, has been the "methodology" for studying and researching information needs and uses.

While it is true that each review in the ARIST reflects
the orientation of the reviewer, most of them agree that the
known methodologies for user studies have so far proven to
be inadequate for the task of completely revealing the
nature and needs of information users (Dervin & Nilan, 1986;
Herner & Herner, 1967; Lin & Garvey, 1972; Lipetz, 1970;
Martyn, 1974; Menzel, 1966; Paisley, 1968). Other reviewers
such as Brittain (1982), Belkin (1984), Dervin, Nilan &
Jacobson (1982), Dervin, Jacobson & Nilan (1982), Faibisoff
& Ely (1976), Ford (1973, 1977), James (1983), Krikelas
(1983), Mick, Lindsey & Callahan (1980), Rouse & Rouse
(1984), Rohde (1986), Taylor (1986), Wersig & Windel
(1985), Wilson (1981, 1984), and Zweizig & Dervin (1977)
have also called for improvement in the methods used for
studying the users' information needs by claiming that for
almost two decades, studies of information needs were
carried out mostly to describe users' actions and expressed
demands from the perspective of the information system and
information providers. In their "Method of Analysis and
Evaluation of Information Needs," Kunz, Rittel and Schwuchow
(1977) called for a new orientation and further development
of methodology for studying information needs.

Wilson (1981) claims that because of past studies which
viewed information needs from the traditional system
perspective, information systems become increasingly
marginal in serving the users' information needs. Wilson

(1984) also states that, the implications from prior research have not been clear. Past studies have been criticized for providing little guidance on how information systems are to meet the users' needs (Stone, 1982). Furthermore, White (1980) concludes that past studies have reiterated only what information systems have put in users' minds and have not helped the information scientists to deal with the real problems involved in bridging the gaps that the users have in their minds.

Past user studies have also been described as technology- and content-driven (Taylor, 1986). Studies which are technology-driven focus the investigation on the technology itself, e.g. the book or the computer. Most of these technology-driven studies are concerned with the way technology affects the storage, accessibility, and dissemination of information and knowledge. Based on their findings, these studies have prescribed size, shape, dynamics, and even the content of information systems. However, Taylor (1986) argues that the constraints of the book, up to now, or the computer, in the future, are the determiners of the technology-driven models.

On the other hand, content-driven studies are concerned with the traditional classifications of knowledge, together with the elaborate schemata that have grown around them over the past 25 centuries (Taylor, 1986). These studies focus their investigations primarily on a variety of powerful ways

of dividing, organizing, thinking about, and perceiving knowledge. The results of these studies have provided information system designers with a means of organizing packages, such as books on shelves, or papers in a file, or references in an index. According to Taylor (1986), in terms of information systems, it is what is in the package, i.e., the subject matter and its storage relative to other similar subject matters and their retrieval, that has established the boundaries and objectives of content-driven systems.

The following illustration clearly shows the contrast between a technology- and/or content-driven system which is presented to the user and a user-driven system which is designed according to user behaviors.

TECHNOLOGY- AND CONTENT-DRIVEN SYSTEM

Data + Intermediary + User

USER-DRIVEN SYSTEM
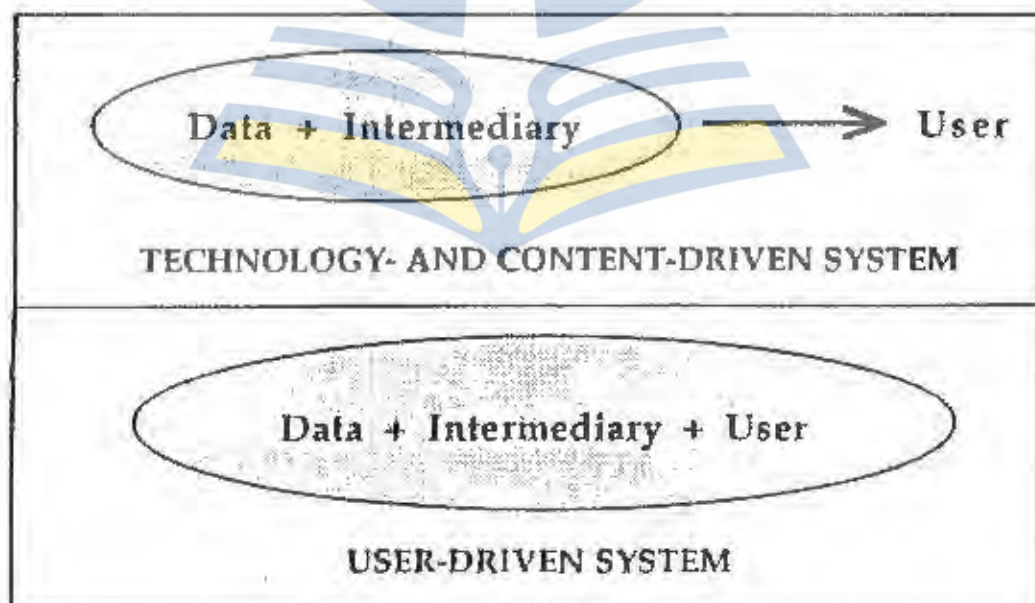
Source: Nilan (1990)

Taylor (1986) further states that it is not that the traditional system-oriented approach is poor, but it is no longer enough for user studies in an information-rich society. The underlying explanation of the call for improvement and a new orientation toward the study of information needs, according to Faibisoff and Ely (1976), is that:

> ... our society is confronted with a number of information needs and problems and we do not seem to have adequate institutions or mechanisms to solve them. Theoretically, the primary purpose of information systems is to meet various information needs. But many systems (e.g. telecommunication, computer) seem to have lacked utility from the beginning because they ignored basic information needs in the interest of manipulating the overabundant data already at hand, as though the whole problem were a puzzle which merely required the rearrangement of a set of pieces. (p. 4)

Since it is clear that designing and improving an information system is neither arranging a puzzle nor adapting the individual users to match the information system, the calls by information scientists for studies of information needs and uses which are useful for practice — through adjusting the services to meet the specific needs of an individual user rather than otherwise (Garvey et al.,

1979] - are urgent and strong in the current literature of information needs and uses.

These calls generally point to the lack of user orientations, as a major, or *the* major stumbling block to more efficient and more effective service. Mick, Lindsey and Callahan (1980) claim that "effective transition into the information age will require switching from information systems that are technology- and content-driven to information systems that are user-driven." Furthermore, Wilson (1981) suggests that there should be a shift of methodological orientation in user studies towards the "user-perception" studies in order to reduce the marginality of information systems. He also believes that user-perception studies in the true sense will avoid the preconceptions about what individual users will perceive to be information and concentrate upon the problems and situations that create the needs. This new emerging user-perception approach, according to Dervin and Nilan (1986), has different characteristics and underlying assumptions from the traditional system-oriented approach.

Characteristics of the System-Oriented and the User-Perception Approaches

The System-Oriented Approach

According to Dervin and Nilan (1986), a study which subscribes to the system-oriented approach usually examines

the extent to which a user or potential user of an
information system has: (1) used one or more information
system and/or different kinds of information services or
materials; (2) sees one or more barriers to the use of the
information system; and (3) reports satisfaction with
various attributes of the system and access to it.

A study using this system-oriented approach looks at
information as if it were an objective thing, something that
existed outside of people and could, therefore, be
transferred from person to person. It posits man as an
imperfect information processor and measures the discrepancy
between what sources think they have transmitted
informationally, and what receivers actually receive, in
order to identify why some receivers receive only an
inadequate portion of the information transmitted, and to
develop approaches to remedy the imperfections.
Furthermore, a study using this system-oriented approach
usually tries to explain differences among users using such
predictors as demographic and sociological influences, life
style, and task descriptions (Dervin & Nilan, 1986).

This approach searches for trans-situational
propositions about the nature of the use of information
systems, and does that by focusing on externally observable
dimensions of behavior and events (Dervin & Nilan, 1986).
Studies using the system-oriented approach noticed that
information seeking and use behaviors are shaped by payoffs

and costs, resources available, expected value of risks, update rates, amount of information available, conflict among sources, and the system context. Furthermore, information seeking and use behaviors are also shaped by individual cognitive style, i.e., internally active vs. externally active, systematic vs. intuitive, or creative vs. less creative (Rouse & Rouse, 1984). The results of these studies illustrate a process by which users adapt to the existing information systems and providers. This perspective has often resulted in blaming the uninformed users for information system failures, since it posits that humans are adaptive creatures. Implicit in this condition has been a call for more information user education.

Early user studies were known to subscribe to the system-oriented approach, which ignores the fact that human beings create their own reality, that they have their own internal information stores which they use to make sense of external information, and of the situation in which they find themselves at any given time (Rohde, 1986). System-oriented approaches generate the research, which in turn generates findings that reify the system's orientation as it currently exists (Dervin & Nilan, 1986). Some examples of these user studies, among others, are the study conducted by the Advisory Council on Scientific Policy in the United Kingdom (1965) which investigates the information needs of physicists and chemists as members of the Chemical Society,

the Royal Institute of Chemistry, and the Institute of
Physics and Physical Society; the study conducted by Chen
and Hernon (1982) which investigates the information seeking
of general citizens in six New England states as related to
the individual's occupation or job; the study conducted by
Brember and Leggate (1982) which investigates the problems
in the provision of medical information; and some user
studies of agricultural, scientific and technological
information in Indonesia (Pringgoadisuryo, 1984).

As mentioned earlier, the system-oriented approach,
which is technology-and content-driven, is no longer enough
in the present information-rich society (Taylor, 1986). It
is not that the society has too much information, but that
the information systems that filter, transmit, and
distribute information do not operate well (Taylor, 1986).
The inadequacies of these systems are due in part to a
failure to understand (1) the context from which the need
for information arises; and (2) the ways in which the
information systems perceive themselves (Mick, Lindsey &
Callahan, 1980). Therefore, the system-oriented approach
must be complemented by the user-perception approach (called
"user-driven approach" by Taylor, 1986).

The User-Perception Approach

In this study, the term "user-perception" approach is
used with the same meaning of "user-oriented" approach used

in many other studies in the field.

A study which subscribes to the user-perception approach is characterized by (1) considering a user of an information system as being constructivist and active; (2) considering a user as being situationally oriented; (3) taking a holistic view of the user's experience; (4) focusing on internal cognition; (5) considering systematic individuality; and (6) having a more qualitative orientation (Dervin and Nilan, 1986).

The premises of the new user-perception approach are that the process of meeting an information need must be viewed from the perspective of the individual information seeker; that the information required and the pattern of effort must be put in the context of the life situation where the need is perceived; and that the use of the information which has been found must be given and determined by the user her/himself (Chen & Hernon, 1982) without preconception as to technology or content (Taylor, 1986). Taylor (1986) also argues for making the user's problem the central focus of user studies which are user-perception.

What information an individual student wants from the information system, what uses s/he makes out of the information, and how the information system can be best designed to fulfill these information needs will depend on the individual student, his/her purposes in seeking

information, and his/her use of that information to bridge gaps (James, 1983). Therefore, any attempt to depict patterns of information seeking must admit the human individual as the center of the phenomenon, and must consider his or her views, needs, options, and prejudices as significant and influential elements deserving investigation. Furthermore, information needs should be defined at the individual level with attention paid to the specific time and space as experienced by individual users.

Although each individual endures his/her own unique and subjective experience as s/he is moving across time and space (Wilson & Streatfield, 1981), there are also great similarities among situations encountered by different individuals. Therefore, information needs are not a subjective and relativistic concept which exists only in the mind of the experiencing individual (Dervin & Nilan, 1986). It is an intersubjective concept with shared meanings, values, goals, etc., which allows the identification of generalizable patterns of information seeking and use behaviors across time and space from the users' perspective (Dervin & Nilan, 1986).

This user-perception approach posits information as something constructed by human beings. It sees users as beings who are constantly constructing, as beings who are free (within the system constraints) to create from systems and situations whatever they choose. The approach focuses

on how people construct sense, searching for generalizable dimensions of sense making, and on understanding information use in particular situations. More importantly, it focuses on the user. It examines the system only as seen by the user (Dervin & Nilan, 1986). However, it does not examine the system based on the demographic characteristics or personal characteristics and habits of the users, since it is proven that these demographic characteristics, personal habits and characteristics are not potential predictors of information seeking and use behaviors of the information users, and more importantly, they ignore changes in perceived time and space (Atwood & Dervin, 1982; Dervin, Nilan & Jacobson, 1982).

This user-perception approach has been employed primarily in the social sciences, e.g., decision-making studies in public administration, advertising and marketing studies, instructional design and development studies, and also communication and information studies in general. In the general field of communication and information studies, this user-perception approach has been translated into some research methods such as the "User-Values" approach (Taylor, 1984), the "Anomalous States-of-Knowledge" approach (Belkin & Oddy, 1978), and the "Sense-Making" approach (Dervin, 1977, 1983).

The Sense-Making Approach

While Taylor (1986) and Belkin and Oddy (1978) have contributed profound theoretical and conceptual arguments for an alternative paradigm in user studies, Dervin (1977) comes up with an established method, the "Sense-Making" approach, to tap the range of information needs from the user's perspective. It has been a widely-used approach employed to tap the range of information seeking and use behaviors from the users' perspective since the late 1970s.

Dervin's Sense Making approach views information as being able to provide only an incomplete, rather than a complete, description of reality, and it is essentially internal, a part of an individual frame of reference, rather than an object which exists externally (Dervin, et al., 1982). Information is that which informs; it is the individual who actively makes sense of the information, intelligently constructs reality, and creatively decides the utility of the information in a given situation--when the gaps emerge and an individual tries to bridge the gaps with inputs from messages (Dervin, 1977, 1980, 1983).

The underlying premises of Dervin's Sense-Making approach are that:

- individuals must be dealt with as individuals rather than as a collection of demographic attributes (individuality);

- each individual moves through a unique time-space-

bound reality (situationality);

- information is that which helps an individual make sense out of his/her situation (utility of information);

- there are underlying, generalizable patterns to the ways people perceive their situations.

Thus, the Sense-Making approach comprehensively addresses the notions of situationality, individuality, utility, and generalizable pattern of information seeking and use behaviors across time and space.

This view suggests not only user control of messages, but also a much more active response to the environment, behavior is controlled by the individual, is responsive to changing conditions in the environment, and is not predetermined by a set of antecedent stimuli (Dervin, Harlock, Atwood & Garzona, 1980). Information seeking and use is then a personal creating of sense which can be seen as a constructive process (Dervin, Jacobson & Nilan, 1982).

Information seekers and users are viewed as those who may want to reduce uncertainty, or who may just as well want informing, instruction, release from a situation, companionship, reaffirmation of reality, or social support (Dervin, 1976); or to make progress in a difficult situation (Zweizig, 1979); or to make sense out of their movement across time and space (Dervin, 1983). The extent to which

information seekers and users integrate the information into their own knowledge structures may reflect at least in part the extent to which they really need the information (Ford, 1983).

This Sense Making approach has been used in a series of studies by Dervin and her colleagues to describe information users in diverse contexts--e.g., blood donors, cancer patients, immigrants, developmentally-disabled adults, library users, computer software users, children using television, and average U.S. citizens (Dervin & Nilan, 1986). After 13 years of development, Dervin is claiming that the approach is still in the beginning stage, and therefore, more research using this Sense-Making approach is needed to uncover weaknesses that are not yet apparent and to stabilize the approach. An example of research that has employed the Sense-Making approach is a study conducted by Dervin, et al. (1982) who used four assumptions underlying this approach to predict the information seeking and use behaviors of patients based on their situational descriptions. The time-line interview technique was employed to interview 82 cancer patients in Seattle. The sample was selected randomly from all chemotherapy and radiation patients listed on Cancer Surveillance System's roster for University of Washington Hospitals between the years of 1976-1981, who were 18 years of age or older, lived in King or Snohomish counties of Washington State and who

were not diagnosed as terminal. The units of analysis for this study were the questions asked by the patients in different situations: questions which reflect the patients' perceptions of their own situation (Dervin, et al., 1982). The interview yielded 525 questions to be analyzed. The researchers came up with some descriptive and predictive results which were summed up as follows:

> Focusing on the evidence, the results, first of all, agree with some standard portrayals of patient health situation as a situation with worry in it, with a concern for understanding what's wrong and for relieving that worry. If the [medical] practitioner knows, for example, that a patient is approaching his health situation as an ends worry, the results here would suggest that the practitioner can expect questions dealing with state of body and reasons for state of body as well as an emphasis in listening to the answers on how they help the patient get away from bad feelings.... (Dervin, et al., 1982)

For the purpose of this study, the Sense Making approach has been selected based on the consideration that it is a comprehensive approach that addresses the situationality, individuality, utility, and generalizable pattern of information seeking and use behaviors from the users' perspective in the context of constant movement and changing reality across time and space. Moreover, it has

been widely used and proven to be an appropriate approach to
tap the range of information seeking and use behaviors from
the users' perspective.

The Distance Education University
and Information Provision

What is Distance Education?

The concept of distance education has been known since
the 1960s. The establishment of the Open University of the
United Kingdom in 1971 marked the beginning of the
popularity of distance education as an educational
institution and a new instructional delivery system.
Advances in educational technology, the use of
individualized instruction, and the application of mastery
learning principles in education have contributed greatly to
the development of distance education up to the present.

The basic principle of distance education is that
instruction should be taken to people where they are, rather
than expecting them to come to where education is (Farnes,
1982). Instead of providing educational opportunities in
large urban institutions at fixed times, educational
materials are delivered to learners who are able to study
anywhere, at times convenient for them, and at their own
pace. These materials are designed for individualized study

and may consist of self-instructional texts, programmed learning materials, reading materials, leaflets, educational games, television and radio broadcasts, audiovisual materials, experimental kits, self-assessment exercises, and so on. In addition to self-assessment, learners may complete assignments that are marked and commented on by tutors. Distance education may also be supported by face-to-face tutorials, self-help groups, and counseling.

Distance education system, which encompass every level of the educational process, is claimed to provide equal access as well as equivalence in quality and status to conventional education system (Batey and Cowell, 1986). Moreover, it is an effort to liberate education from time and space constraints that is expected to advance the development of any nation. It has also been recognized as a form of study which is wider than merely correspondence study (Holmberg, 1981). Moore (in Wedemeyer, 1973, as cited by Holmberg 1981) states that distance education is an approach to teaching and learning supported by "those teaching methods in which because of the physical separateness of learners and teachers, the interactive, as well as the preactive phase of teaching is conducted through print, mechanical, or electronic devices." Holmberg further states that the main general characteristic of distance education is that it is based on non-contiguous communication, i.e., "the learner is at a distance from the

teacher for much, most, or even all of the time during the teaching-learning process."

As a consequence of this general explanation of distance education mentioned by Holmberg (1981) and Moore (1973), there are six specific descriptions that explain the process of distance education system:

* The basis of distance education is normally a "pre-produced course or teaching materials," which is usually printed but which may also consist of presentation by media other than the written word.

* Organized two-way communication takes place between the students and a supporting organization, i.e., the university.

* Distance education supports individual study, which is the goal of all education systems according to Sims (as cited by Holmberg, 1981): "the essential objective in educating processes is learning by an individual learner ... the methodologies or strategies employed are only incidental to this end."

* Since the course developed can be used by a great number of students easily and to great financial advantage, distance education can be--and often is-- a form of mass communication.

* In preparing a mass communication program, it is practical to apply the methods of industrial work,

which include planning, rationalizing procedures,
division of labor, automation, and controlling.
This has led Peter (as cited by Holmberg, 1981), to
describe distance education as an industrial type of
teaching and learning.

* The technological approaches implied do not prevent
personal communication of a conversational character
from being the backbone of distance education.
Distance education is, therefore, regarded as a
mediated form of guided didactic conversation, where
the student is not alone but benefits from the
course and from interaction with tutors and the
supporting services.

Many definitions of distance education have been
offered, in addition to Holmberg's, in what has become an
extensive literature on distance education. Keegan (1986)
concludes that distance education is generally characterized
by:

a. The separation of students and teachers,

b. The influence of an educational organization,

c. The use of educational media,

d. The provision of two-way communication,

e. The possibility of meeting for didactic and
socialization purposes.

For the purpose of this study, Keegan's characterization of distance education is used as the operational definition of the term, with the focus on distance education at the tertiary or university level.

Why Distance Education?

In developing countries, the combination of a limited supply of competent teachers and limited resources with a high demand for education provision from persons who are geographically isolated at dispersed rural areas have caused the concept of non-resident education to be adopted as a feasible and practical delivery system of education. The instructional materials for learning at a distance presumably can be produced for dissemination by a small number of available skilled and knowledgeable teachers or experts (Sewart, 1983). To the governments of developing countries, students' migration to educational centers in urban areas further substantiates the necessity for a non-resident education system to accelerate the process of mass education in those countries. The students in such programs usually have obligations (employment and/or family obligation) which hinder them from going away to school; they often also have physical, geographical or financial handicaps that hinder them from going to school (Feasley, 1983). In contrast, in the economically developed countries, non-resident education is more popular for

continuing education and/or retraining efforts. In this context, it serves as a means for a nation to keep up with the rapid pace of social change and rapid expansion of knowledge in such fields as computer technology.

Batey and Cowell (1986) argue that distance education is capable of providing:

* equity and increase in the quality of educational opportunity, especially for students who have geographical, financial and other handicaps.

* access to subject matter experts who are not available in the local community, especially for countries with the shortage of instructors.

* interaction and joint activities with students in other educational institutions, in some cases including the simple sharing of everyday instruction through cooperative agreement between educational institutions.

* increased access to information and instructional resources, especially with the advancement of computer technology for information networking.

* opportunities for staff development and in-service training, especially in business and industry, and the reduction of the cost of human resources development.

* and promoting and increasing school/community linkages, especially when a distance education

system gets involved in a community development program.

In general, distance education provides an alternative to conventional education systems which usually offer limited opportunities and rigid regulations for students and potential students. In many countries, it is a supplement to the conventional education system. Distance education opens possibilities for study adapted to individual needs, wishes, and conditions, and can, through a mass-communication approach, offer these possibilities to large numbers of people (Holmberg, 1981).

The Non-resident Students

Characteristically, non-resident students are different from their peer resident students. There is no evidence to indicate that non-resident students should be regarded as a homogeneous group (Holmberg, 1981). The only common factor, according to Holmberg (1981) is that, with few exceptions, these students are adults and employed and/or housewives. The age group of 25 to 35 seems to be the largest one in most distance education systems (Emmer, 1987; Holmberg, 1981). The non-resident students usually are scattered across the region. While some of them may live near the central and/or regional office of a distance education institution, others may live far away from those offices.

Motik (1989) synthesizes the students' reasons for learning at a distance, which include:

- the ability to get an opportunity to study without having to go physically to the educational center ("uneconomical use of time"). This is usually due to working and/or family conditions which require students to work at times that hinder them from attending regular classes.

- shortages of instructional materials and expertise, which limits the students' access to conventional education.

- the inability of conventional education to provide places for the rapidly expanding demand for education.

- geographical, financial and physical handicaps.

Furthermore, students also feel that it is easier to facilitate the planning of a study program and to assess the progress made in a distance education program, that distance education allows them (students) to work and study at their own pace, and that it offers an opportunity to study alone rather than with others (Feasley, 1983; Flinck, 1979; Glatter & Weddel, 1971; Holmberg, 1981; McIntosh, 1976).

Non-resident students, in general, seem to be highly goal oriented (Holmberg, 1981), instead of being socially and/or learning oriented (Houle, 1963). In his study in

1976, Holmberg states that 75% of the non-resident students
declared that they studied in order to qualify for promotion
and to improve social status. In many respects, non-
resident students in developing countries seem to have the
same motives for study and for their choice of distance
education (Ansere, 1978; Flinck, 1979).

The most apparent characteristic of non-resident
students is their independence (Moore, 1977). Non-resident
students decide their own goals and objectives, seek and use
the information they need, collect ideas, and practice
skills while working to solve problems and to attain their
objectives. They also judge if, and to what extent, the
study matter and what has been learned are relevant to their
own situation and needs (Holmberg, 1981).

Information Provision in the Distance Education University

Information provision in distance education
institutions is considered a supporting service provided by
the institution to support the students' learning process
(Sewart, 1983) in an institution where learning is primarily
in the hands of the students rather than being the
responsibility of both teacher and students (Moore, 1973).
Thus far, information provision in distance education covers
library services, tutorial activities, news broadcasts
through mass media such as newspapers, television, and
radio, and some internal publications such as a university

catalog and a university magazine for its non-residential students.

The problem in terms of students' information seeking and use in distance education is unique in that the students are separated from the institution, often by a considerable distance, so that they lack the regular informal contact with fellow students and tutors which is valuable for information transfer, and they have few information systems whose primary concern is to serve their needs (Wilson, 1978). The structure of existing information provision is often based on the information provision system for resident students. The design of such systems is based on results of the traditional system-oriented research, which are no longer adequate and need to be complemented by the results of user-oriented research (Taylor, 1986).

Several researchers have used the system-oriented approach to study the use of libraries by distance education students, e.g., Gains, 1978; Groark, 1974; Orton & Wiseman, 1977; and Wilson, 1978). Those studies concluded that the factors which influence information use in distance education are travelling time, collection adequacy, costs, and service hours.

Gains (1978) conducted a follow-up survey on "libraries and other information sources for Open University students [in the United Kingdom] on higher level courses." It was a follow up of the Wilson and Masterson survey in 1973 which

came to the conclusion that Open University students in
foundation or second level courses seemed to make little use
of libraries, and that they used libraries less than
students at the third and fourth level (Gains, 1978).
Gains' study (1978) was intended to discover how students in
higher level courses gain access to libraries and special
sources, what library and information sources are available
to students, which services those students make use of, and
how they use these services, and what special problems are
faced by students who are remote from library service
points. The survey was undertaken through [course] document
review, survey questionnaires, and an availability of
material test. The sample was taken from the list of
students who enrolled in seven courses. The result tended
to confirm the assumption that students in higher level
courses are far more likely to require access to libraries
than those in the foundation or second level courses. The
study showed that 44% of the sample had used three or more
different libraries. The public library was the most
frequently used, and the polytechnic libraries were the
least frequently used. Seventy-seven different specialized
resources related to the courses were cited. Study space
and reference services were the most popular services being
used. Travelling times, costs, and inadequate collections
were the most commonly mentioned difficulties in making use
of libraries or specialized sources of information.

Students' suggestions for the improvement of library and information services include membership policy, service hours, collection development, and bibliographic instruction.

Groark's study (1974) is different only in terms of the context of the study. While the other studies were conducted in the United Kingdom, Groark's study was conducted in the United States. Groark surveyed three New York tertiary institutions in an attempt to determine the use made of library resources by the non-resident students and their attitudes toward libraries. The result of Groark's study was a recommendation for administrators to improve library services for non-resident degree students.

Orton and Wiseman (1977) conducted a study in Canada with a larger sample than the previously mentioned studies: 480 students. The result of the study by Orton and Wiseman is a list of information sources which are available to distance education students at Queens and Trent University.

Fisher (1978) conducted a comparative study on information provision for external students in the United States and in the United Kingdom. The major aim of the study was to assess the guidelines developed by the Association of College and Research Libraries (ACRL) in 1967 for library services to extension students. The results indicated that few library services were available to extension students either in the United States or in the

United Kingdom at that time.

A more recent study (Latham, 1985) investigated the off-campus students' attitudes, needs, and use habits of libraries in Alberta, Canada. A structured questionnaire was distributed to 180 students and the response rate was 69%. The result of this study was a list of recommendations for the improvement of library services for off-campus students, and a specific recommendation that "services offered students and faculty in extended campus programs should be designed to meet effectively a wide range of different information and bibliographic needs" (Latham, 1985).

A literature review on library services for non-resident students was done by Haworth in 1982. The review covers literature on library services for non-resident students in the United States, United Kingdom, Canada and Australasia (Haworth, 1982). Haworth's concluding remark is that "no literature has been found that maintains that the external student is not disadvantaged when compared with his internal peers" (Haworth, 1982).

The above studies are only a few examples of studies which subscribe to the "system-oriented approach" in information seeking and use studies. Most of these studies focused on investigating "what is available out there for the users," "how the users use those available sources," "what the system can see and understand about the students'

information needs," "how the existing system elements do not match the students perceived needs," and "how the system can fulfil those needs as observed by the researcher, librarian, or system designers." As mentioned earlier, they are not concerned with the users' perception of "what their information needs are", "how they use the information" as seen by the users themselves, and "how the information system for them can be best designed according to their own perspective." The research instrument was usually developed on the basis of available existing services. Recommendations for these services were usually oriented toward the users to adapting themselves to the system, e.g., taking user education.

In all of these studies, the call was for information systems to fulfill and meet the information needs of distance education students (Haworth, 1982). However, it seems that no study has been conducted to investigate the range of information seeking and use behaviors of distance education students which has focused on the users' perspective and allowed the students' information needs to be seen and described by the individual students themselves. Furthermore, the results of these studies do not provide guidelines for the best way to design an information system that fulfills and meets the information needs of non-resident students (Fisher, 1982). No challenges have been made as to whether or not the existing system for

information provision in distance education institutions is appropriate or adequate for fulfilling the information needs of distance education students.

This condition arises from the system designers' lack of understanding about the students' information needs (Fisher, 1982). What the system perceives as the students information needs may not be what the students themselves perceive as their own information needs (James, 1983). If a distance education institution is to help its non-resident students with information services, the administrators, educators, and information system designers need to know, in the first place, the pattern of the information seeking and use behaviors of those students. With that knowledge, they can develop guidelines and specifications for designing information services that fulfill the information needs of the non-resident students.

Therefore, it is believed that a study of the information needs of non-resident students which employs the user-perception approach will be able to provide an illustration of the range of information needs of non-resident students based on their unique situations. This understanding of the range of the information needs of non-resident students will also provide useful guidelines for the design and improvement of the information system for these students.

Distance Education in Indonesia

The Universitas Terbuka (UT), the Open University of Indonesia, is a university-level institution which was launched by the Indonesian Government in September 1984 based on the Presidential Decree no. 41/1984 (Setijadi, 1987). The two basic purposes of the UT are to provide:

- the opportunity of tertiary education to all qualified Indonesians throughout the country, and
- educational opportunities for the working people.

The three major reasons for the creation of the UT in Indonesia are:

- UT is a means to provide opportunities for tertiary education for those students who cannot attend regular classes in a conventional university, because they live in geographically isolated areas and/or remote areas spread out over 13,000 islands in the Indonesian archipelago.
- UT is the only tertiary education institution in Indonesia which can accommodate a large number of students at one time.[1]

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[1] The number of high school graduates who applied for admission to tertiary level education as of 1984 was 983,263 (public = 724,856; private = 258,407). The public universities (total = 49) were able to accommodate 138.114 students or 19% of the total applications to public universities. The private universities were able to accommodate 142,714 or 55% of the total applications to private universities. On the average, the tertiary level education in Indonesia can accommodate only 29% of the total

- UT also allows all secondary graduates to continue their education, regardless of the obstacles that may be created by the age of their secondary school diploma, their own age, their family situation, working conditions, and/or geographical location.

The Indonesian Government seemed to believe that the advantages of the distance education program which is offered by the UT may provide solutions to educational problems in Indonesia (Motik, 1989), especially the problems created by geographical dispersion, overpopulation, the increase in demand on tertiary education, insufficient numbers of educational facilities and resources, and insufficient capacity for the number of students who wish to pursue their studies at the tertiary education level.

The distance education program at the UT uses printed self-instructional materials as the primary instructional delivery mode. Audio-visual materials such as audiocassettes, radio and television broadcasts are also used to support the printed materials.

The UT provides opportunities for both degree and non-degree programs in the four major areas of the Social Sciences, Economics, Statistics, and Education. Since its

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applications for the new academic year (Source: Report of the Directorate General of Higher Education 1984/1985, Ministry of Education, Republic of Indonesia, Jakarta; 1985).

first courses offered in 1984/1985, the UT has accommodated more than 125,000 students scattered over all parts of the country.

Like other distance education institutions, the UT does not have a campus as the conventional university does. Instead, it has the Central Administration Office in Jakarta and 32 regional offices. The Central Office of UT in Jakarta is primarily responsible for the development, production, and distribution of learning materials and media. It is also responsible for providing the students with support services, centrally and/or regionally, in addition to its responsibility for coordinating examinations and program administration. At present, the number of staff members at the Central Office has reached 600 people.

The regional offices are responsible for the management of the teaching-learning process in their respective regions, which includes the administration of unit tests, semester examinations, and management of the tutorial program. In its operation, the UT is also assisted by the post offices, national television broadcasting programs, the Center of Communication and Technology for Education and Culture, the PALAPA satellite coordinator, national and public libraries, and the Computer Center of the University of Indonesia. Each regional office is managed by a faculty member from the local university who functions as the director of the regional office. In addition to his/her

part time function as the director of the regional office of
the UT, this faculty member usually maintains a full time
position as an instructor/lecturer in the local university.
In his/her duty as the director of the regional office, s/he
is usually assisted by some administrative staff.

In order to support the learning process of the non-
resident students, the UT currently provides supporting
information through the mass media, the regional offices,
the Central Office, study groups, study centers, local
libraries, and significant others. Generally, the mail
service is the most reliable and popular means of
communication between students and the information centers.
In addition, there are telephone system, newspapers, and
radio and television broadcasts which are also popular means
of communication for the non-resident students.

The links between the UT as a system (including the
administrators, educators and system designers) and the
students as the system's users appears to be a web of
information flows and activities. The current information
system has not yet been studied to determine whether or not
it has been able to meet and fulfill the information needs
of the non-resident students, and there does not seem to
have been any investigations of the range of the information
needs of the non-resident students. As mentioned earlier,
it is essential for the UT as the information provider to
understand the information needs of its non-resident

students, if the design of its current information system is to be improved so that it can better serve the information needs of this group.

The Conventional University
and Information Provision

The primary feature of a conventional education system, which distinguishes it from a distance education system, is the unity of teacher and students in one place. Resident students come to a place where they can obtain face-to-face guidance from the teacher and administrators, and have access to supporting materials and resources. Included among the materials and resources for academic support are libraries, laboratories, and studios. Bureaucratic support materials provide information on management, logistics, and other administrative functions. In addition, resident students in conventional education have the advantage of regular informal and formal contacts with their fellow students, and teachers, as well as with the information sources directly on location (Kaye and Rumble, 1981).

Information Provision in a Conventional University

Information provision in a conventional education system is one of the most active components of the system in

terms of its contribution to the formation of the
intellectual, ethical, and cooperative skill of students as
the information users (Stoica, 1977). The interaction
between resident students and information provision in
conventional education have been studied by many researchers
using the system-oriented approach. These studies have
focused on such variables as student attitudes; their
information seeking and use behaviors; their use of
particular information media such as periodicals,
catalogues, and textbooks; and their use of information for
particular purposes in particular subject areas. Some
examples of these studies include research done by Barkey
(1965), Bozimo (1983), Ford (1973), Kernaghan et al. (1979),
Lane (1966), Osiobe (1987), and Sellen and Jirouch (1984).

In 1962-1963, Barkey conducted a study to investigate
the pattern of students' use of the Library at Eastern
Illinois University. Defining "use" as identical to
"borrow," he collected the call slips for books from the
closed stacks library to measure their use. His study found
a very low level of use of the library by undergraduate
students. Out of 2967 undergraduates who came to the
library, 37% were the book borrowers, while the rest
borrowed no books at all. He also found that freshmen were
more active borrowers (40%) than students in the other
classes. Furthermore, he claimed that there was a positive
correlation between grade point average (GPA) and library

use: students with high GPAs used the library more than
those with low GPAs (Barkey, 1965).

Lane (1966) studied the undergraduate use of the
library in the University of Delaware for two years from
1961. Survey questionnaires were used for this four-phase
study. The questionnaire items covered all sources and
services available in the university library. The findings
of this study indicated that seniors used the library more
than freshmen, reserved books were the most heavily
withdrawn, periodicals were mostly used by seniors, and
novels were the most mentioned recreational reading.

Ford published a literature review on "Research in User
Behavior in University Libraries" in 1973. Reviewing about
110 articles from the preceding decade, Ford concluded that
the 1960s research lacked theory and adequate definitions of
concepts (Ford, 1973). He further mentioned that the
consequences of the inadequate theory and definitions were
that the results of surveys of information seeking and use
behaviors cannot be satisfactorily interpreted and compared.
He also claimed that "we [the researchers] know practically
nothing about the who-what-why-how-when-and-where of
information needs and use" (Ford, 1973).

Kernaghan, Kernaghan, O'Keefe and Rubenstein (1979)
made an attempt to investigate the influences of traditional
library service principles on library use by conventional
university students. Five major medical schools on the West

Coast were selected as the sample population. A close-ended questionnaire was used to collect information. In this study, Kernaghan et al. defined "seeking patterns" as habitual ways of obtaining the information sources and "use patterns" as a variety of sources being used by the students. They came to the conclusion that traditional principles of library operation did influence the library use (Kernaghan, et al., 1979); for example, they found that larger library collections seem to attract greater frequency of use.

One of the early studies in the tradition of information seeking and use behaviors, Barkey's study (1965) used the system-oriented approach which treats users as passive receivers of what was available from the system. Like Barkey, Lane and Kernaghan, et al. also employed the system-oriented approach in their studies. Some other studies on information seeking and use behaviors of conventional university students which were conducted using the system-oriented approach, include the study done by Bozimo in Nigeria (1983) on the expressed library needs of graduate students and faculty members; the study by Sellen and Jirouch at Pennsylvania State University (1984) which compared the perceptions of library use by faculty and students; and the study by Osiobe in Nigeria (1987) on the use of information in the card catalog by undergraduate students.

An example of a study on information seeking and use behaviors of conventional university students, which used the user-oriented approach, was conducted by Nilan and Fletcher in 1987. Their study was intended to provide design specifications for an electronic mail system as a means of submitting proposals for doctoral students. They employed a user-oriented approach--Dervin's Sense Making method--to create a user-defined, situational model of the proposal preparation process in terms of a synthesis of time-line steps across individuals, and described each of these synthetic time-line steps in terms of the kinds of information seeking and use behaviors that were involved across many actors (Nilan & Fletcher, 1987). The study resulted in a list of user-defined proposal preparation activities. In addition, they concluded that by applying Dervin's Sense-Making method to an information system problem, they have demonstrated the practicality and potential of a user-oriented methodology--Dervin's Sense Making method--for information system design (Nilan and Fletcher, 1987). They also suggest further exploration in the general area of information seeking and use behaviors using the approach and method they employed in their study.

Due to the changing economic and demographic conditions, and the rapid expansion of knowledge, some conventional universities are currently engaged in non-resident education. They market and offer educational

opportunities to clients via a distance education mode. As
mentioned earlier, while distance education is becoming more
acceptable at present, information services for non-
resident students are failing to receive attention from the
administrators, educators and information system designers.
For the new clients — the non-resident students — the
information provision that the system offers is the existing
information resources, which are primarily beneficial to the
resident students in campus. The university system often
does not bother to question whether or not the existing
information provision for residential students will also be
suitable for its non-residential students.

The existing information system for the resident
students was designed on the basis of past studies, which
assume that the information needs of non-resident students
are similar to those of the resident students; which
subscribes to the system-oriented approach, and the
implications of which have been questioned. However, no
apparent attempt has been made to study, discern, and
compare the information seeking and use behaviors of the
non-resident students and resident students thus far. A
study of this kind would provide clear guidance for
administrators, educators, and information system designers
in developing information services that will fulfill the
information needs of both the resident students and the new
clients, the non-resident students,

Conventional Higher Education in Indonesia

The first effort to establish higher education in
Indonesia dates from 1856, when a medical school for native
Javanese doctors was founded by the colonial Dutch
government. Recognizing the need for educated manpower for
national development, the independent government of
Indonesia in 1961 decided to establish universities in all
of the provinces of Indonesia in order to provide a wider
access to education. In 1984/1985, there were 49 public
universities (including 10 teacher-training colleges), 14
Islamic institutes, and about 553 private universities
(including institutes, advanced schools, and academies)
which were granting degrees as well as certificates in
Indonesia (Report of the Directorate General of Higher
Education 1984/1985).

Indonesia, as one of the developing countries, has
undergone rapid changes brought about by worldwide
developments in science and technology, in economics and
political affairs, and in demographic and social structures.
These changes have brought new demands and challenges to
higher education. Indonesian higher education has also
grown and changed, though it is claimed that it has adapted
all too slowly to national needs (Knowles, 1977). The
scarcity of resources has kept higher education from
responding more fully to the new demands for increased
enrollments, better quality education, and a greater variety

of programs. To overcome this problem, some changes have already been implemented in Indonesia, including the coordination of the national entrance examination, the introduction of a common (liberal arts) freshmen program and rural community development programs, the requirement for study-service programs and field works, in-service and graduate training for instructors, the application of educational technology, the application of some university's management models (Knowles, 1977), and the establishment of the Open University of Indonesia.

The expansion of higher education in Indonesia has been motivated not only by the development program which has called for more highly trained personnel, but also by an increasing demand for advanced schooling on the part of the population. According to Thomas (in Husen and Postlethwaite, 1985), a study which was conducted in the early 1980s showed that 90% of the students in representative high schools planned to enter higher learning institutions. Since the most prestigious public universities had room for only 10% of the applicants in the early 1980s, increasing numbers of private colleges/ universities and the Open University of Indonesia were being set up to accommodate the applicants.

Information services in the conventional university in Indonesia are considered to be one of the support systems for the teaching and learning activities, which are mainly

carried out through face-to-face meeting. These services are provided through a variety of ways and structures. Bureaucratic information can be obtained through the Administrative Bureau of Student Affairs (Biro Administrasi Kemahasiswaan), which produces a number of publications as the mechanism to deliver bureaucratic information to students, including a university catalog, course selection and course schedule, guidelines and information on tuition and financial aids. Academic information can be obtained through the library, instructors, academic advisors, and significant others (include teaching assistants and peer tutors). Advisory and counselling information can be obtained through the Students Body under the supervision of the Vice Chancellor of Student Affairs. Unless the buildings are separated in a physical distance (though they usually are located in the same city/town), all of the services are available to resident students in one location.

Formally channeled through the Administrative Bureau of Students Affairs and libraries, information services are required in all higher education institutions under the Government Regulation no. 5/1980 for the higher education structure in Indonesia. Therefore, each higher education institution will have one Administrative Bureau of Students' Affairs and at least one library. The 1981 Directories of Special Libraries and Information Sources provides data for 55 higher education institutions with 118 libraries

employing 1,314 persons including 305 professional
librarians (in Unesco, 1985).

Although a variety of research studies on higher
education in Indonesia has been conducted by many
researchers (e.g., Moegiadi, et al., 1979; Nasoetion, et
al., 1976; Postlethwaite, 1978; Sudijarto, 1976), so far,
apparently no study has been done on information needs;
information seeking; information uses; and information
services in the context of higher education in Indonesia.
Therefore, a study of the information seeking and use
behaviors of resident students in a conventional university
is highly important.

Summary

While there is a vast body of literature and research
in the area of information needs and information users in
general, and some of resident students and non-resident
students in particular, no apparent attempts have been made
to discern the information seeking and use behaviors of the
non-resident students at a distance education university and
the resident students at a conventional university from
their own perspective. Especially in Indonesia, studies of
information needs, seeking and use behaviors in the context
of tertiary level education are very rare.

Moreover, methodologically, the majority of research
has viewed information seeking and use behaviors most often

from the system's perspective, while the trend at present is to call for studies which view information seeking and use behaviors from the users' perspective (Wilson, 1981). In other words, the call has been for studies which look intensively into differences of information seeking and use behaviors of students in any education system from their own perception and focuses on individual student behaviors to obtain the information necessary to meet his/her need in a particular educational context.
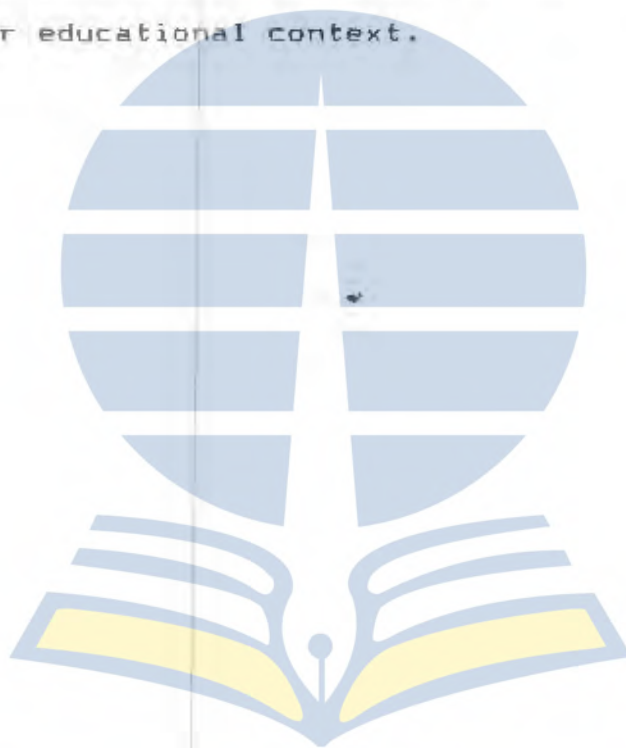
CHAPTER THREE

Methodology

Design of the Study

The general design of this study uses survey research. This approach has been selected because the study is basically interested in describing the patterns of "needs" and "behaviors" of two groups--resident and non-resident students in seeking and using information. Alreck and Settle (1985) state that the topics of "needs" and "behaviors" are two of the most appropriate topics for survey research. They also claim that survey research design is an appropriate method for a descriptive study which deals specifically with "patterns," which this study is interested in investigating; in this case, patterns of information seeking and use behaviors of the two user groups.

The Approach of the Study

The general approach of this study is the "user-oriented" approach. The specific approach employed in this study is the "Sense-Making" approach, which is user-oriented. In the most general sense, "Sense-Making" is defined by Dervin (1983) as behavior, both internal and external, which allows the individual to construct and design his/her movement through time-space. This Sense-

Making approach is one of the most widely used approaches
employed to tap information seeking and use behaviors from
the users' perspective. It is used to study how individuals
construct sense of their worlds and, in particular, how they
construct information needs and use information in the
process (Dervin, 1983).

This Sense Making approach is based on the user's
perspective of her/his information needs"(Nilan & Fletcher,
1987), rather than on the system's perspective. The Sense-
Making approach rests on the following model:

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+--------------------------------------------------------+
|                                                        |
|   SITUATIONS-------------------GAPS--------------USES   |
|                                                        |
+--------------------------------------------------------+
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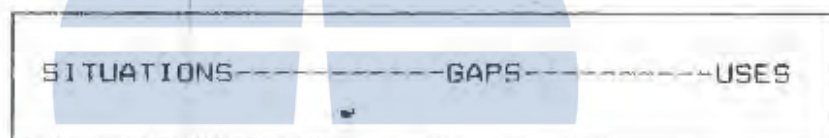
The model incorporates the following:

    SITUATIONS: The time-space contexts in which sense is
                  constructed.

    GAPS: The gaps seen as needing bridging, translated
                  in most [user] studies as "information needs"
                  or the questions people have as they construct
                  sense and move through time-space.

    USES: The uses to which the individual puts newly
                  created sense, translated in most [user]
                  studies as "information helps." (Dervin, 1983)

Situation is the broadest component of this model. As
mentioned earlier, it is the time and space context in which
the information need arises, and it sets the stage for
information seeking and using to occur. It refers to a
perceived information-need situation experienced by an

individual user, and sometimes operationalized to consist of several sequential "events." In this study, situation is operationalized into academic/course-related situations and bureaucratic/system-related situations; and consists of four sequential events.

The user, in the context of the situation, encounters a series of gaps, or points at which the user's understanding is incomplete, or the user runs out of sense. The gap is a situation in which an individual is trying to make sense out of something, and it is seen as impeding the actor's movement. This gap is operationalized as questions or sets of questions representing an information need (Dervin's term: "Sense-Making Instances") which is perceived at a specific point in time by the user.

Information is that which helps the user to make sense out of the situation, i.e., to bridge the gap. In this study, information is operationalized into "answer" to a given question of individual user at a specific point in time. Several attributes of information investigated in this study are:

- the source of information: a spatial context of where an individual user found her/his answer to her/his question at a specific point in time. In this study, the source of information is operationalized into institutional and non-institutional sources.

- method of getting information: means or procedures employed by an individual user to obtain/find an answer to her/his question at a specific point in time. In this study, the method of getting information is operationalized into the perceived effort, activeness of an individual in getting answers to questions, perceived degree of importance of getting answers, and strategies used by an individual student to get answers to her/his question.

- time of getting information: the specific point of time when the user is getting an answer to his/her question. It is operationalized into three time boundaries: the point when the question was asked (now), in the later subsequent event(s) in the situation (later), and after the problem or the situation is over (after).

Use is what the user does with the information acquired in order to bridge the gap and keep moving across time and space. In this study, use is operationalized as expected and actual help(s) or way(s), from the users' perspective, in which answers to questions are put to work.

The three-point model depicts the relationship of the underlying premises of the Sense-Making approach –

individuality, situationality, utility of information, and generalizable patterns. The Sense-Making approach assumes that when one attempts to understand the sense made by another, it is useful to assess three points — situation, gap, and uses — as a minimal basis for co-orienting, since different people create sense differently (each has a different situation, different gaps, and different uses) (Dervin, 1983). However, although there is some degree of subjectivity in individual experience, needs and knowledge, the Sense-Making approach assumes that there are also great similarities among the situations encountered by different individuals, which then allows the generation of patterns of information needs across the time and space of different individuals.

Dervin's Sense-Making approach has been selected to be the specific approach of this study, because it is an approach which appropriately takes into account the users' perspective and is consistent with the concept of users' movement in different situations across the changing time and space. The ultimate intent of using this Sense-Making approach is to be able to yield data that are directly useful for information practice. The Sense-Making approach has been a widely used approach to tap the information seeking and use behaviors of many kinds of information users across time and space from the users' perspective.

Data Collection Technique

Basically, the data collection technique for this study is the in-depth interview. The Micro-moment Time Line Interview, which is the core method of the Sense-Making approach, is considered to be the appropriate method for collecting data for the purpose of this study, because it comprehensively addresses the three-point model of the Sense-Making approach through measuring the situation, the gaps, and the variables of the individual user's information needs across time and space in order to generalize the patterns of information seeking and use behaviors of individuals (Dervin, 1983). It is a method which allows the user to create his/her own personal context, and it also takes care the user's movement across changing time and space as perceived by the user her/himself.

The Micro-Moment Time Line Interview involves asking individual respondents to detail what happened in a situation step-by-step in terms of what event happened first, second and so on. Then, for each step, the respondent is asked what questions s/he had, what things s/he needed to find out, learn, come to understand, or make sense of. Once the sequence of events and questions are elicited, in-depth analysis of each question is then performed. The in-depth analysis requires the interviewer to ask for detailed explanation of each question from the individual respondent. The detailed items in the in-depth

analysis usually measure the variables that the researcher
is investigating, such as time, effort, source, strategy,
and use.

The overall process is best illustrated as follow:
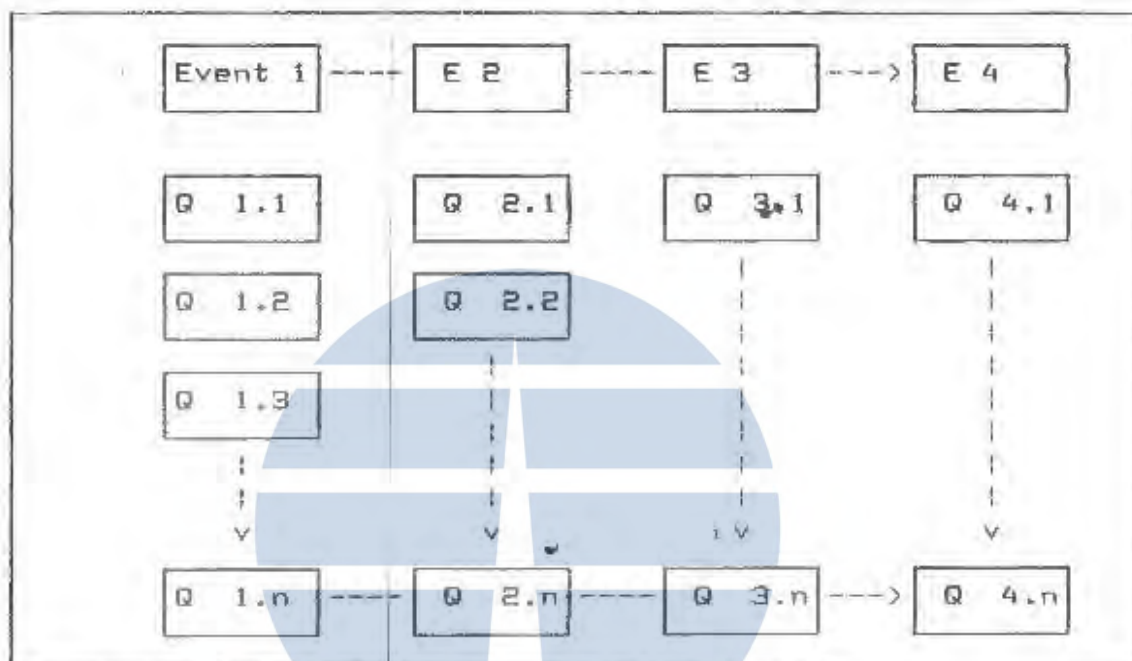
E = Event (a series of events is a situation)
Q = Questions

For the purpose of this study, the Micro-Moment Time
Line Interview is adapted to a "storyboard" through
collapsing the time into structure. The purpose of the
adaptation process is to be able to reduce the amount of the
time required to complete the interview, since the pretest
indicated that too much time was required to elicit all of
the information needed for a full Micro-Moment Time Line
from each respondent. In the storyboard, one situation is
defined as consisting of only four events. Although an

adaptation was made in this case, the major conceptual and methodological strengths of Dervin's Sense-Making approach is retained. The four-sequential-events in the storyboard serves as a framework for the researcher and the interviewers in collecting data. However, the four-sequential-events are not to limit the freedom of the respondents to choose more or less than four events when reporting their individual problematic situations in the interview process; they assist in helping them to recall the full range of gaps that each of them experienced in their problematic situations.

The term "storyboard" comes from a tool used by movie directors to communicate with their special effects and scenery people. The essence of this technique is to invoke the metaphor of a comic strip in the newspaper. The respondent is to verbally describe her/his situation in four "panels" or pictures, the first one representing the first event that happened and the last one representing the last event that happened. The middle two panels allow the respondent to elaborate on the changes and developments in the situation.

This storyboard technique allows the respondent to create a personal context (i.e., "real" to that individual respondent) for the interview. This context takes account of changing time/space, provides graphic description, and respondent-defined language for use in assessing information

needs. The personal contexts or situations, in this case, are the academic and bureaucratic situations in a resident and a non-resident university.

Once the sequence of events (or actions) of the storyboard is elicited, the interviewer goes on to assess the information needs of the respondent. This is done by asking the respondent to think back to the point in time when s/he was experiencing the activity in the first panel and to articulate the questions that s/he had at that particular point in time. The respondents are allowed to give the interviewer as many questions as they feel they need to represent the full range of information needs in that event. Based on the pretest, an average number of questions for a single respondent in a single situation of four subsequent events is ten. This means that, on the average, there are ten gaps experienced by a respondent in making sense out of one type of situation.

When all related questions [according to the respondent] are already documented, in-depth analysis of each question is then performed. In this study, the in-depth analysis consists of nineteen items which analyze the variables of this study: situation, gap, information, and uses. While most of the items are open ended, close-ended items (using a seven-point scale) are also used for expended effort and degree of importance. The seven-point scale is used in order to translate the effort and degree of

importance into a numerical value.

Instrumentation

In brief, the instruments[e] for this study consist of:

1.   The storyboard, a structured open-ended questionnaire
     for verbally eliciting the respondent's situation in
     four successive panels, and for eliciting a series of
     questions asked by the respondent in each event
     (storyboard = events + questions).

     The storyboard, as a metaphor for organizing
     respondent's verbal description of a process or a
     situation, is the operationalization of two variables
     in this study: situation and gap. Situation is
     operationalized as four successive events. Gap is
     operationalized as the respondent's questions in a
     particular event. The situation and gaps are to be
     reported verbally.

2.   In-depth analysis of each respondent's questions, a
     structured questionnaire consisting of fifteen open-
     ended and four close-ended interview items, and a six-
     item series asking for the respondent's demographic
     data (questionnaire = question analysis section +
     respondent's data).

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[e] See Appendix A for the full version of the
     instruments.

This in-depth analysis is the operationalization of two other variables of this study: information and use. Information is operationalized as an answer to a question. It also includes the assessment of information attributes as perceived by the respondent: source of information, time of getting an answer, perceived effort expended to get an answer, perceived importance of getting an answer, actively trying to get an answer, strategies being used to get an answer, and the perceived completeness and partialness of an answer. Use is operationalized as how the respondent uses the answers obtained in sense-making: expected and actual use. All variables are measured through open-ended interview items, except the effort expended and the degree of importance for obtaining an answer which is measured by a seven-point scale, and the respondent's demographic data which are tapped through six closed-ended items.

The instruments had been pretested three times. The first pretest, conducted in November, 1988 in Syracuse, N.Y., was concerned primarily with the usefulness of the storyboard as an interview technique and the flow and structure of the questionnaire. This pretest was done in English, using resident and non-resident students at Syracuse University as the sample. This pretest consisted

of two pretest activities; the small scale pretest and the major scale pretest. The interviewers were graduate students at the School of Information Studies at Syracuse University, who were taking the course IST641 Behaviors of Information Users. The pretest and interviewer training activities were parts of the course. The small scale pretest was a part of the interviewers' training. It was conducted with 24 respondents in order to test the coherence of the instruments and the flow or the sequence of structured interview items, to investigate whether the instruments will collect the appropriate data for the purpose of the study, and to detect problems or difficulties in collecting data using the instruments (e.g., language problems). The major scale pretest was conducted with 30 respondents (15 resident students and 15 non-resident students) and resulted in 252 units for analysis (questions). The objectives of the major scale pretest were the same as those for the small scale pretest. As a result of this pretest the flow and structure of the questionnaire were modified, as well as the language and terminology used in the questionnaire. The results of this pretest also indicated that, an average of 60 minutes was required to complete one situation interview. Due to time constraints during this pretest, the field procedure was also modified slightly; one respondent was required to report only one situation, instead of two. The results of both the small

scale pretest and the major scale pretest indicated that the
instruments were able to tap a range of information needs of
individuals in changing time and space.

The second pretest was conducted using the translated
(or Indonesian) version of the instruments. It was conducted
in Syracuse during the second and third weeks of August,
1989 using six Indonesian fellows studying in Syracuse
University as the surrogate sample. This pretest was
conducted primarily to identify any problems with the
language and/or the structure (sequence of items) of the
instruments. As a result of this pretest, modification of
the language and the structure of the instruments was done.
Furthermore, the results of this second pretest also
indicated the amount of time required for one situation
interview process ranged from 90 to 120 minutes per
situation per respondent. Conditions of fatigue and boredom
for the respondents in eliciting two types of situations and
also for the interviewer who had to interview each
respondent for about 180 - 240 minutes, were also noted in
the process of this second pretest. This condition brought
about changes in terms of the situation assignment for each
respondent and the sample size of the study. The preplanned
assignment was that a single respondent was to report two
types of situations, one situation at a time. However, as a
result of this second pretest, a rearrangement was made
where one respondent was to report and to be interviewed

only for one type of situation in order to avoid bias data
caused by fatigue and boredom. Accordingly, the sample size
was doubled to accommodate the changes.

The third pretest was done in Indonesia as a part of
the interviewers' training both in Jakarta and Ujung
Pandang. In addition to familiarizing the interviewers with
the instruments, this pretest was also intended to identify
difficulties in language and flow of the interview process
using the instruments. This pretest was conducted using
some of the interviewers' friends, colleagues and
significant others who were either resident or non-resident
students. No major problems were identified in terms of
language of the instruments and the flow of the interview
process using the instruments.

Based on the results of those pretests, therefore, it
was concluded that the instruments were adequate to collect
data for the purpose of this study, that is, to gather data
on the range of information needs of individual resident and
non-resident students.

Field Procedures

The interviews were conducted in Jakarta between
September 10 and September 26, 1989; and in Ujung Pandang
between October 5 and October 21, 1989. The permission to
conduct research and interviews in the University of
Indonesia - Jakarta, the Open University of Indonesia -

Regional Offices in Jakarta and Ujung Pandang, and the
Hasanuddin University - Ujung Pandang was given by an
authority in each educational institution. Specific times
and places for interviews were arranged with the field
interviewers, the respondents, and the educational
institutions. The letter of notification (see appendix B)
about being selected as a respondent along with a return
envelope was sent to the respondents prior to the interview
schedule. The respondent replied to the researcher
indicating the preferred time for him/her to be interviewed.
From those responses, the researcher then developed the
interview schedule.

The interview was conducted on a one-to-one basis in
each educational institution. The places or rooms for the
interview process were prepared by an employee of the
educational institution and the Students' Union. Beverages
were provided for both respondents and interviewers. The
interview took place according to the schedule from 9.00
a.m. to 4.00 p.m every working day (5 working days) for the
resident students. For non-resident students, the interview
took place, according to the schedule, from 9.00 a.m. to
7.00 p.m. everyday including Saturdays and Sundays. At the
end of the interview, each respondent was given
reimbursement for her/his travel expenses.

The interview itself involved several steps, which were
to be repeated for each of the two situations. A single

respondent was expected to elicit one type of situation: academic or bureaucratic which was assigned randomly. The first step of the interview process was an introduction to the interviewer and a description of the purposes and procedures of the study for the respondent. The second step was the assurance of confidentiality, legal protection of the respondent, human subject approval, including obtaining permission to record in case the interviewer was using an audiocassette recorder. The third step was for the interviewer to ask the respondent to recall one academic or one bureaucratic situation, which s/he experienced. The interviewer guided the respondent to describe her/his situation in four successive panels of events and to recall as many questions as possible for each event. The fourth step was analyzing the questions using the question analysis questionnaire, which was repeated for all questions that the respondent had elicited in that particular situation. At the very end, the respondent's demographic data were tapped. Finally, the interviewer thanked the respondent for being helpful in the process. The same procedures were then repeated for every individual respondent.

The Interviewers

The interviewers were selected by the local authority based on the request submitted by the researcher prior to the field time. There were four interviewers in each place

to assist the researcher in the process. The four interviewers in Jakarta were academic staff at the Open University of Indonesia with Sarjana (Bachelor's Degree) qualification. The four interviewers in Ujung Pandang were free local staff graduated from Hasanuddin University with Sarjana qualification.

Training for the interviewers was done both in Jakarta and in Ujung Pandang for four days prior to the field time in each place. The training included an explanation of the instruments (going over the instruments section by section); the presentation of some theoretical background of the approach being used, and guidelines for field or field procedures (see appendix C). It also included a role play of an interview between the trainer and the trainees. The trainees were expected to familiarize themselves with the instruments and field procedures. The interview exercises were done by the trainees using their friends, colleagues and/or significant others. The trainees reported problems and difficulties they encountered during these interview exercises, which then were discussed together with the trainer.

In case of a conflicting schedule or interviewer absence, the researcher was also involved in interviewing the respondent(s).

Administration of the Study

The Time Plan

This entire study was conducted between June 1989 and July 1990. The proposal was completed in early August 1989. The translation process of the instruments and the second pretest were carried out in late August 1989. The data collection in Jakarta and Ujung Pandang was carried out between September 1989 and the end of October 1989. The data collection activity also included respondent selection and interviewers' training. Data analysis and report writing took place between November 1989 and July 1990.

The Setting

The study was conducted in Indonesia, specifically in Jakarta and Ujung Pandang. Jakarta and Ujung Pandang were selected, since both cities are considered metropolitan cities in Indonesia; Jakarta is a metropolitan city in the western part of the country, while Ujung Pandang is a metropolitan city in the eastern part. It is a fact that Jakarta is more urban and has better economic conditions than Ujung Pandang. However, the influences of the sociocultural and socioeconomic conditions of the two cities on the pattern of information seeking and use behaviors of students were not regarded as a primary criterion for analyzing and interpreting the results of the study.

This study involved three public universities, one non-

resident university namely (1) the Open University of
Indonesia, especially the Regional Offices in Jakarta and
Ujung Pandang, and two resident universities (2) the
University of Indonesia in Jakarta and (3) Hassanuddin
University in Ujung Pandang.

The Sample

In general, sampling was carried out in this study
primarily to obtain a range of representatives of the
population and secondly to avoid bias. Stratified random
sampling was employed to select subjects of this study. It
was intended to cover a range that was representative of the
population in order to provide a variety of information
needs of students from each stratum.

The sample was mainly students selected from the School
of Economics in the three universities. The respondents
were stratified into:

1) resident vs. non-resident students
2) the number of credits earned:

(0-20) (21-40)	: Semesters 1 and 2 (Freshmen)
(41-60) (61-80)	: Semesters 3 and 4 (Sophomore)
(81-100) (101 - 120)	: Semesters 5 and 6 (Junior)
(121 - 160)	: Semesters 7 and 8 (Senior)

The preplanned proportion of sample was as follows:

- 64 resident students:

   a. 32 students from the University of Indonesia,
      Jakarta (8 students from each stratum: freshmen,
      sophomore, junior, senior).

   b. 32 students from Hassanuddin University, Ujung
      Pandang (8 students from each stratum: freshmen,
      sophomore, junior, senior).

- 64 non-resident students:

   a. 32 students from the Regional Office of the Open
      University of Indonesia in Jakarta (8 students from
      each stratum: freshmen, sophomore, junior, senior).

   b. 32 students from the Regional Office of the Open
      University of Indonesia in Ujung Pandang (8 students
      from each stratum: freshmen, sophomore, junior,
      senior).

The sample size was preplanned based on the results of
the second pretest. However, the final actual sample size
was n=145 students, and the proportion was as follows:

- 69 resident students

   - 32 from the University of Indonesia - Jakarta
     (7 freshmen, 11 sophomores, 8 juniors, 6
     seniors)

   - 37 from the Hasanuddin University - Ujung
     Pandang (9 freshmen, 9 sophomores, 11 juniors,
     8 seniors)

— 76 non-resident students

— 36 from the Open University of Indonesia —
Jakarta Regional Office (9 freshmen, 5
sophomores, 12 juniors, 10 seniors)

— 40 from the Open University of Indonesia —
Ujung Pandang Regional Office (7 freshmen, 12
sophomores, 9 juniors, 12 seniors)

This proportion resulted from the fact that oversampling
(400%) was carried out to avoid high non-response rate in
the first place. The letter of notification to participate
in this study was sent to 256 non-resident students (128 in
Jakarta and 128 in Ujung Pandang) and appointment to
participate was given to 256 resident students (128 in the
University of Indonesia and 128 in the Hasanuddin
University). The response rate was indeed very low in both
cities: non-resident students — 20% and resident students —
18%. A second random sample was then undertaken in a very
limited time. The letter of notification was sent to 64
non-resident students (32 in Jakarta and 32 in Ujung
Pandang). For resident students, the Students' Union, in
both places, helped the researcher appoint more students to
participate to help furnish the given proportion of the
sample size. However, halfway through the interview period,
the interviewers reported a very low participant rate. The
next step was to recruit whoever was available on site at

the time of the interview. Then, at that time, the
respondent size was increased to 17 more than had been
planned. From 145 participants altogether, 40% (n=58, 31 of
non-resident and 27 of resident students) were selected
using convenience sampling and voluntarily participation

The overall description of the population of this study
is presented in Table 1: gender, age, current load of the
semester, source of funding, total credits earned, post
secondary education experience, and total family income.

The respondent size for this study may seem relatively
small for a survey. According to Alreck and Settel (1985),
a small sample is acceptable whenever survey research: (1)
involves a relatively large volume of information and
response tasks (i.e., in-depth interviews) are required from
each respondent, and (2) focuses more on patterns among
responses than on items taken individually. Furthermore,
small respondent size is not the case in this study, because
the unit of analysis is not the individual respondent but
the questions elicited by the respondents. The final number
of questions elicited by 145 respondents were n=1,072 for
both academic and bureaucratic situations. The proportion
of the questions, (n=1,072), are as follows:

- 521 questions from 69 resident students

- 198 questions from 32 students of the University
of Indonesia

- 92 questions from 16 academic situations

TABLE 1: Respondents' demographic data — gender, age, current load, source of funding, total number of credits earned, post secondary education experience, total family income.

Description	Resident Students		Non-Resident Students		TOTAL	
	n	%	n	%	n	%
GENDER						
- female	14	20.3	14	18.4	28	19.3
- male	55	79.7	62	81.6	117	80.7
Total	69	100.0	76	100.0	145	100.0
AGE						
- 18-20	8	11.6	1	1.3	9	6.2
- 21-30	61	88.4	31	40.8	92	63.4
- 31-40	-	-	28	36.8	28	19.3
- 41-50	-	-	15	19.8	15	10.3
- >51	-	-	1	1.3	1	.7
Total	69	100.0	76	100.0	145	99.9
CURRENT LOAD						
- 0-12	14	20.3	40	52.6	54	37.2
- 13-20	37	53.6	32	42.1	69	47.6
- >20	17	24.7	4	5.2	21	14.5
- missing	1	1.4	-	-	1	.7
Total	69	100.0	76	100.0	145	100.0
SOURCE OF FUNDING						
- Self	-	-	64	84.2	64	44.1
- Parents	69	100.0	12	15.8	81	55.9
Total	69	100.0	76	100.0	145	100.0
TOTAL CREDITS						
- 0-40	16	23.2	16	21.1	32	22.1
- 41-80	20	29.0	15	19.7	35	24.1
- 81-120	19	27.5	23	30.3	42	29.0
- 120-160	14	20.3	22	28.9	36	24.8
Total	69	100.0	76	100.0	145	100.0

TABLE 1: (continued)

Description	Resident Students		Non-Resident Students		TOTAL	
	n	%	n	%	n	%
POST SECONDARY ED.						
- 1 year	19	27.5	19	25.0	38	26.2
- 2 years	3	4.3	6	7.9	9	6.2
- 3 years	4	5.8	9	11.8	13	9.0
- 4 years	2	2.9	6	7.9	8	5.5
- 5 years	-	-	10	13.2	10	7.0
- 6 years	-	-	1	1.3	1	.7
- other (incl. 0)	38	55.1	21	27.7	59	40.7
- missing	3	4.3	4	5.2	7	4.8
Total	69	99.9	76	100.0	145	100.1
MONTHLY FAMILY INCOME						
- -Rp. 30,000.-	-	-	1	1.3	1	.7
- Rp. 31-100,000.-	3	4.3	13	17.1	16	11.0
- Rp. 101-200,000.-	10	14.5	19	25.0	29	20.0
- Rp. 201-300,000.-	8	11.6	16	21.1	24	16.6
- above Rp. 300,000.-	14	20.3	8	10.5	22	15.2
- refused	13	18.2	10	13.2	23	15.9
- n.a.	21	30.4	9	11.8	30	20.7
Total	69	100.0	76	100.0	145	100.1

103

- 106 questions from 16 bureaucratic situations

- 323 questions from 37 students of the Hasanuddin University

  - 178 questions from 19 academic situations

  - 145 questions from 18 bureaucratic situations

- 551 questions from 76 non-resident students

  - 231 questions from 37 students of the OUI - Jakarta Regional Office

    - 118 questions from 18 academic situations

    - 113 questions from 19 bureaucratic situations

  - 320 questions from 37 students of the OUI - Ujung Pandang Regional Office

    - 149 questions from 18 academic situations

    - 171 questions from 21 bureaucratic situations

Data Analysis

Data were analyzed in two stages. First, a content analysis was completed for each of the open-ended variables in the study, e.g., the description of the question, the source of the answer, the strategy for obtaining an answer, and the expected and actual use of the answers. Second, a descriptive statistical analysis was done after the completion of the content analysis.

Content Analysis

Content analysis is a technique for systematically describing the form and content of written or spoken material (Sommer & Sommer, 1986). The basis of a content analysis is quantification, that is expressing qualitative data in numbers. Thus, content analysis involves a transformation process that allows large volumes of textual materials (spoken or written) to be analyzed in fewer content categories. In this study, the content analysis emphasizes the content of the materials, that is, specific topics or themes from the qualitative data on the research variables.

Content analysis has an advantage of eliminating possible researcher's bias that can occur when the researcher generates/interprets respondents' responses in an interview study, through the process of interjudge reliability coding, since the content analysis is done after all the data are collected or after the field work. In addition, Sommer and Sommer (1986) claim that although content analysis is a very tedious activity, it is well suited to comparisons among different populations, groups, or nations.

Content Analysis Procedures

The standard content analytic procedures are: developing coding procedures, developing categories or

schemes, the interjudge reliability coding process, and coding the data based on the content analysis schemes.

Developing coding procedures requires the researcher to define a recording unit that best fits the requirement of the defined research problem and to develop rules for identifying a recording unit. A recording unit can be a word, word sense, sentence, theme, paragraph and/or the whole text. Rules for identifying a recording unit are necessary to maintain consistency in coding and classifying a recording unit. In this study, the recording unit is specific topics or themes from the qualitative responses to the questionnaire items.

As the recording unit has been identified and rules have been established, the schemes for classifying recording units were established inductively and deductively. In the inductive development of a content analysis scheme, categories are generated from about 20% of the data and each category in each variable of interest is identified in its turn. An inductive content analysis scheme is essentially open-ended, and each time a new theme is encountered, it is either added to one of the categories previously identified or a new category is created for it.

Some categories of variables investigated in this study had been inductively developed based on the responses to the pretest in November 1988, such as "question description scheme," "source scheme," and "strategies scheme" (see

appendix D). Some refinement, based on a 20% random sample from the total n=1,072, was done on these schemes since some categories were not appropriate anymore for the current set of data in this study, and some new categories were needed. The new "reasons scheme" was also developed inductively and added to the three existing schemes. These inductive schemes, however, are still open for further refinement, which means that each time a new unit is encountered, additional or new categories may be created as needed.

Content analysis schemes can also be developed deductively. In deductive development, the researcher predefines the categories of interest prior to analyzing the data. In this study, some deductive content analysis schemes were used. These are taken from the pre-established schemes of Dervin (1983), because it is believed that those schemes are measuring the same variables investigated in this study, such as "helps/uses scheme," "5-W scheme," and "entity focus scheme" (see appendix D).

Following the categories/schemes development was the interjudge reliability coding process. It is a process that ensures the objectiveness of the content analysis by examining whether several coders can use the categories and explicit rules with a high degree of intercoder reliability. Stempel's (1955) percentage agreement index (PAI) was employed for determining the interjudge coding reliability coefficient in this study. PAI is the proportion of times

that two coders agree on a code divided by the number of possible codes. The normal social science reporting criteria require an agreement of at least .80 (80% agreement) before a content analysis scheme can be considered reliable. PAI is obtained from a 20% random sample of the entire documented data, which are coded independently by two or more coders for each content analysis scheme. When a PAI of .80 or better has been achieved, then the content analysis scheme will be used for the remainder of the data.

In this study, the PAI was determined based on the result of the interreliability coding performed by two coders; the researcher as the first coder and one colleague (graduate student in public administration) as the second coder. A 20% random sample of n=1,072 (n=214) served as the basic data set for the interreliability coding process of seven schemes. In this study, the initial results of the PAI were as follow:

- CA #2 Nature of Questions - Descriptive (aboutness) PAI = .84

- CA #3 Nature of Questions - 5W PAI = .89

- CA #4 Nature of Questions - Entity Focus PAI = .85

- CA #5 Help/Uses PAI = .79

- CA #6 Strategies PAI = .92

- CA #7 Source - Type PAI = .95

- CA #8 Reason for Not Trying PAI = .90

Since the PAI of CA #5 did not fulfill the requirement of .80 at the initial effort, a second round interreliability coding was undertaken. 10% random sample of n=1072 (n=107) served as the basic data set for the second interreliability coding process of CA #5 scheme. Further explanations were given and new rules for coding using CA #5 scheme were set prior to the process. It was expected that further explanation and more rules would provide a better frame of reference for both coders. The result of this second round process increased the PAI of CA #5, from PAI=.79 to PAI=.85.

Besides the second round interreliability coding effort to uplift the PAI of CA #5, some resolving of disagreements in CA #3 and CA #4 was also performed. More rules were set up for coding data using CA #3 and CA #4. In the process, both coders discussed the disagreements and applied the coding rules. The results of the resolution were then processed using the Scott's (1955) adjustment formula, which basically corrects the bias resulted from a small number of categories in a content analysis scheme (no more than six categories). The final PAI for CA #3 was PAI=.95 and for CA #4 was PAI=.88.

Both the second round interreliability coding for CA #5 and adjustment for CA #3 and CA #4 were intended to improve the degree of reliability of those content analysis schemes.

Since the required percentage agreement index or the

interjudge reliability coefficient for the seven content
analysis schemes was achieved, the overall data, n=1,072,
were then analyzed using those seven schemes.

Statistical Analysis

After the completion of the content analysis, a
descriptive statistical analysis was performed to address
the concerns of this study. Since this study is intended to
be a descriptive study, descriptive statistical analysis is
the main analysis technique. This analysis includes
arranging the raw data in a frequency distribution and
calculating the measures of central tendency — mean
(average), median, mode, and range.

Summary

In summary, this survey research study was interested
in tapping information seeking and use behaviors of resident
and non-resident university students from Indonesian
universities. The approach taken was based on Dervin's
Sense-Making approach which uses the assumption of
situationality, individuality, utility of information, and
generalizable patterns of information seeking and use
behaviors from the users' perspective. The data collection
technique employed in this study was the storyboard
technique which was adapted from the Micro-Moment Time-Line

Interview as the core data collection method.

The study was administered in Indonesia, involving two resident universities and one non-resident university. The instruments were designed based on the existing guidelines from the Sense-Making approach. The instruments were pretested three times and were translated into the Indonesian language. The interviewers were recruited in Indonesia and trained for field procedures.

The respondents for this study were 69 resident students and 76 non-resident students, who altogether reported 1,072 questions as units of analysis. The data were analyzed using the content analysis and descriptive statistical analysis to describe the information seeking and use behaviors of the resident and non-resident university students.

CHAPTER IV

Research Findings

This study was designed to investigate the information seeking and use behaviors of resident and non-resident university students as perceived by the students themselves. Employing the Sense-Making method of Dervin, this study was intended to be able to tap the information seeking and use behaviors of both student groups, and to compare the differences and similarities of the information seeking and use behaviors of resident students with non-resident university students in Indonesia. The results of the data collection and analysis undertaken in this study have revealed some major findings which are descriptive of the phenomena being investigated.

Since one goal of the study is to provide guidance and a design framework for educators, administrators, and information system designers of both conventional and distance education systems, particularly in Indonesia, that will enable them to design the information system for each user group, it is important to develop a practical framework for presenting the results of this study. The results of this study will be presented in terms of the twelve variables investigated under the three main issues that guided this investigation.

This chapter presents the general description of the

information seeking and use behaviors of the resident and non-resident university students, without comments from the researcher. There are eight tables presented in this chapter to illustrate the similarities and differences in the information seeking and use behaviors of the two user groups. In addition to comparing resident and non-resident students, the situations in which the questions were raised - academic and bureaucratic situations - were also compared. These situations were compared to highlight the degree of overlap between the two situations as perceived by students, since there is no clear cut procedure for separating the two situations (Robinson, 1981). The discussion presented in this chapter includes only the major categories which were represented more than 7% in the data set within each table. Seven percent was selected arbitrarily as the cut-off point, and those categories which were represented less than 7% were considered to be outliers and not representative of the total data set. However, an exception applies to Tables 3, 4, 11, and 12, in which all points are discussed since there are no more than six categories in each table.

There are seven additional tables presented in this chapter to illustrate the similarities and differences in the information seeking and use behaviors of the two user groups when their questions or gaps remained unanswered (failure analysis).

General Findings

The assumption was that there are differences and similarities between the information seeking and use behaviors of the two student groups since they have different education delivery systems, environments, and structures, and they face different situations. The differences and similarities between the information seeking and use behaviors of the two student groups are presented in a series of eight tables. Differences and similarities are indicated in terms of their question descriptions; the nature of their questions; the focus of their questions; the perceived expected and actual helps/uses of answers to their questions; the strategies they employed in trying to find answers to their questions; their sources of answers to their questions; and their reason for not being active in finding answers to their questions. Also presented are the average number of questions being answered; the average time answers were obtained; the degree of their "activeness"[a], the degree of effort expended to find answers; the perceived importance of getting answers; and the completeness and helpfulness of the answers once obtained. Differences and similarities of failures, problems and obstacles encountered by both resident and non-resident university students facing their academic and bureaucratic problems, as they were

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[a] In this study "activeness" is freely used with the meaning of "being active" in trying to find answers to questions.

moving across time-space in their learning process, will also be discussed and shown through some of the tables.

1. Range of questions of resident and non-resident university students

Question Descriptions

Table 2 presents the comparison of question descriptions (aboutness) between resident and non-resident university students in both academic and bureaucratic situations. The description of questions in Table 2 simply means the aboutness of the question or the topic of the question. The scheme employed for analyzing the range of questions in Table 2 was the Descriptive Scheme (CA #2, see Appendix D). The Descriptive Scheme was developed inductively and it has the interjudge coding reliability coefficient of .84 (PAI=.84, see Stempel, 1955).

The first column of Table 2 clearly indicates that resident students facing academic situations had seven major concerns. Those concerns were academic support (18.9%, n=51), e.g., "Is there any Indonesian version of these reference books?", "Does the library carry this book?"; self-ability (18.2%, n=49), e.g., "Will I be able to read these readings within a very short time?"; friends (12.6%, n=34), e.g., "Will my friend help me to deal with this problem?"; course content (10.7%, n=29), e.g., "What formula

TABLE 2: Comparison of question descriptions (aboutness) between resident and non-resident students

Description*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
SELF												
- Self-evaluation	19	7.1	11	4.4	30	5.8	20	7.5	9	3.2	29	5.3
- Self-ability	49	18.2	10	4.0	59	11.3	36	13.5	15	5.3	51	9.3
- Time Management	8	3.0	8	3.2	16	3.1	13	4.9	13	4.6	26	4.7
ACADEMIC MATTERS												
- Grades	4	1.5	17	6.8	21	4.0	6	2.2	12	4.2	18	3.3
- Course Content	29	10.7	10	4.0	39	7.4	51	19.1	11	3.8	62	11.3
- Regulations and Procedures	4	1.5	25	10.0	29	5.6	6	2.2	18	6.3	24	4.4
- Academic Support	51	18.9	7	2.8	58	11.1	54	20.2	23	8.1	77	13.9
- Intra and Extra Curriculum	2	.7	-	-	2	.4	-	-	-	-	-	-
ADMINISTRATIVE MATTERS												
- Registration	6	2.2	40	15.9	46	8.8	3	1.1	80	28.2	83	15.0
- Logistics	3	1.1	-	-	3	.5	11	4.1	41	14.4	52	9.4
- Financial Aid	-	-	14	5.6	14	2.7	1	.4	-	-	1	.2
- Sanctions	1	.4	7	2.8	8	1.5	1	.4	-	-	1	.2
- Grade Reports	-	-	10	4.0	10	1.9	-	-	6	2.1	6	1.0
STRATEGY	25	9.3	13	5.2	38	7.3	23	8.6	16	5.6	39	7.1
PERSONNEL												
- Academic Personnel	26	9.6	51	20.2	77	14.8	5	1.9	8	2.8	13	2.4
- Administrative and Support Personnel	3	1.1	5	2.0	8	1.5	8	2.9	8	2.8	16	2.9
SIGNIFICANT OTHERS												
- Friends	34	12.6	20	7.9	54	10.4	22	8.2	22	7.7	44	8.0
- Family	5	1.9	2	.8	7	1.3	5	1.9	1	.3	6	1.0
Other, Don't Know, and Missing	-	-	2	.8	2	.4	2	.7	1	.3	3	.5
(n=1072)**	269	99.8	252	100.4	521	99.8	267	99.8	284	99.8	551	99.9

* PAI for Descriptive Scheme is .84

** The total percentage may not be 100% due to rounding.

116

should be used to solve this equation?"; academic personnel (including instructors, professors, academic advisors, and teaching assistants) (9.6%, n=26), e.g., "Why does the professor's explanation confuse me?"; strategy (9.3%, n=25), e.g., "What shall I do now to solve the problem?"; and self-evaluation (7.1%, n=19), e.g., "Am I the only one who experience this problem?." The fourth column of Table 2 shows that non-resident students facing academic situations had six major concerns. Those concerns were academic support (20.2%, n=54), course content presented through instructional modules (19.1%, n=51), e.g., "Is the formula given in this module correct?"; self-ability (13.5%, n=36), strategy (8.6%, n=23), friends (from study groups and other universities or colleges) (8.3%, n=22), e.g., "Can my friend give a clear explanation to me about this?"; self-evaluation (7.5%, n=20), e.g., "Will I pass this second exams?"

The major concerns of the resident students facing academic situations are more or less similar to those of the non-resident students. They differ slightly in terms of their rank order and their percentages. The notable difference is that resident students reported more frequently questions about academic personnel, including instructors, professors, academic advisors, and teaching assistants, while the non-resident students reported less frequently questions about this matter. Furthermore, although course content was reported concern of both

resident and non-resident students, it seems that non-resident students showed their concern with this matter almost twice as much as resident students. Meanwhile, the reverse condition applies to self-ability where it becomes a relatively high concern of resident students, almost 1.5 times as much as the concern of non-resident students.

Facing bureaucratic situations, resident and non-resident students indicate some similar and some different concerns. The four highest concerns of resident students in facing bureaucratic situations were: academic personnel (20.2%, n=51), e.g., "Will my advisor have time to see me today?"; registration (15.9%, n=40), e.g., "Why have they not returned my course selection sheet?"; academic regulations and procedures (10%, n=25), e.g., "Is it possible for me to take this required course concurrently with the other required course?"; and friends (7.9%, n=20), e.g., "Does my friend know the procedure to fill in the course selection sheet?." Non-resident students also had four major concerns in bureaucratic situations: registration (28.2%, n=80), e.g., "Do they have extra 2B pencils for me to use to fill in this form?"; logistics (14.4%, n=41), e.g., "Why the module is not available in the regional office?"; academic support (8.1%, n=23), e.g., "Are there any other places where I can get references written in this module?"; and friends (from study groups and/or other universities or colleges), e.g., "Do they also experience

the same problem with registration?."

In bureaucratic situations, the most notable differences between the resident and non-resident students lay in the areas of logistics and academic personnel. Resident students showed no concern for logistics, while it was the second major concern of the non-resident students. On the contrary, non-resident students showed a relatively low concern for academic personnel, while it was the first major concern of resident students facing bureaucratic situations. Slight differences also occurred in the areas of registration and academic support, which became the concern for non-resident students twice as often as they did for resident students. Resident students showed relatively higher concern for financial aid, grades, and academic regulations and procedures; while non-resident students showed no concerns for financial aid, and low concerns for grades and academic regulations and procedures.

The third and sixth columns of Table 2 depict the total picture of the question descriptions of resident and non-resident students facing both academic and bureaucratic situations. Academic personnel (14.8%, n=77), self-ability (11.3%, n=59), academic support (11.1%, n=58), friends (10.4%, n=54), and registration (8.6%, n=46) were the highest concerns of the resident students facing both academic and bureaucratic situations. For non-resident students, registration (15%, n=83), academic support (13.9%,

n=77), course content (11.3%, n=62), logistics (9.4%, n=52), and self-ability (9.3%, n=51) were the major concerns when facing both academic and bureaucratic situations.

Nature of Questions (5W)

In addition to the description of questions in terms of aboutness (topics), the resident and non-resident students' questions were also described in terms of their nature: WHEN, e.g., "When is the appropriate time for me to see my professor?"; WHERE, e.g., "Where is the Central Office of the Open University?"; WHY, e.g., "Why do I have to take a make up exams? My grade is not good?"; HOW, e.g., "How do I concentrate on my readings?"; WHO, e.g., "Is he a good instructor?"; WHAT, e.g., "What is my goal?." Table 3 presents the nature of questions of both resident and non-resident students in their academic and bureaucratic situations. The scheme employed for analyzing the questions to be presented in Table 3 is the 5W Scheme (CA #3, see Appendix D). The 5W Scheme was developed deductively, and it has the interjudge coding reliability coefficient of .95 (PAI=.95, see Stempel, 1955 and Scott, 1955).

Table 3 shows that in facing academic situations (first column), the nature of resident students' questions were mostly about WHAT or the identification of non-human entities - objects or situational conditions of an event (53.5%, n=144). The identification of procedures, or means

to move from one point to another in time-space (HOW) was
the second most frequent type of questions of resident
students (17.5%, n=47). The third most frequent type of
questions expressed by resident students was about WHY or
the identification of reasons, causes and explanations of
events (11.9%, n=32). Other categories of the nature of the
resident students' questions were WHO (8.9%, n=24), WHERE
(6.3%, n=17), and WHEN (1.9%, n=5). The pattern of resident
students in academic situations was almost the same as that
of the non-resident students in the same situations (fourth
column). The highest level in the nature of questions
category of non-resident students in academic situations
(fourth column) was the same as that of the resident
students, which was WHAT questions (55.1%, n=147). The
second highest was HOW (20.6%, n=55). The third in the
ranking was WHERE, or the identification of entities in
space (7.9%, n=21). Other categories of the nature of
questions of non-resident students were WHY (6.4%, n=17),
WHO (5.2%, n=14), and WHEN (4.9%, n=13).

When facing bureaucratic situations (second column),
the highest level in nature of resident students' questions
was WHAT (51.6%, n=274). HOW (16.7%, n=42) and WHO (10.7%,
n=27) were the second and third highest, respectively, in
this category as perceived by the resident students. Other
responses in this category were WHY (9.1%, n=23), WHEN
(7.5%, n=19), and WHERE (4.4%, n=11). A different pattern

was indicated in the case of non-resident students facing
bureaucratic situations (fourth column). The first two
highest levels in the nature of questions of non-resident
students, WHAT (52.5%, n=149) and HOW (20.6%, n=55) were the
same as the first two levels of questions of resident
students. However, non-resident students had different
perceptions. For non-resident students, the third position
in the nature of questions category was WHY (11.6%, n=33).
Other categories including WHEN (8.5%, n=24), WHERE (6.3%,
n=18), and WHO (4.2%, n=12) were the fourth, fifth and sixth
ranks, respectively, as rated by the non-resident students.

The overall picture of the nature of questions of
resident and non-resident students facing both academic and
bureaucratic situations is also illustrated in Table 3
(third and sixth column). The first three types of
questions were the same for both resident and non-resident
students: WHAT (respectively: 52.6%, n=274; 53.7%, n=269),
HOW (respectively: 17.1%, n=89; 18.7%, n=103), and WHY
(respectively: 10.6%, n=55; 9.1%, n=50). The other three
types of questions of resident students were WHO (9.8%,
n=51), WHERE (5.4%, n=28), and WHEN (4.6%, n=24). WHERE
(7.1%, n=39), WHEN (6.7%, n=37), and WHO (4.7%, n=26) were
the other three categories for non-resident students.

TABLE 3: Comparison of nature of question (5W) between resident and non-resident students

Nature of Question* (5W)	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
WHEN**	5	1.9	19	7.5	24	4.6	13	4.9	24	8.5	37	6.7
WHERE	17	6.3	11	4.4	28	5.4	21	7.9	18	6.3	39	7.1
WHY	32	11.9	23	9.1	55	10.6	17	6.4	33	11.6	50	9.1
HOW	47	17.5	42	16.7	89	17.1	55	20.6	48	16.9	103	18.7
WHO	24	8.9	27	10.7	51	9.8	14	5.2	12	4.2	26	4.7
WHAT	144	53.5	130	51.6	274	52.6	147	55.1	149	52.5	269	53.7
Other, Don't Know, and Missing	-	-	-	-	-	-	-	-	-	-	-	-
(n=1072)**	269	100	252	100	521	100	267	100.1	284	100	551	100

* PAI for Nature of Questions (5W) is .95

** The total percentage may not be 100% due to rounding.

TABLE 4: Comparison of the entity focus of question between resident and non-resident students

Entity Focus*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
SELF	56	20.8	25	9.9	81	15.5	53	19.9	33	11.6	86	15.6
OTHER PERSON	44	16.4	43	17.1	87	16.7	25	9.4	20	7.0	45	8.2
OBJECT	34	12.6	19	7.5	53	10.2	37	13.9	34	12.0	71	12.9
SITUATION	135	50.2	165	65.5	300	57.6	152	56.9	197	69.4	349	63.3
Other, Don't Know, and Missing	-	-	-	-	-	-	-	-	-	-	-	-
(n=1072)**	269	100.0	252	100.0	521	100.0	267	100.1	284	100.0	551	100.0

* PAI for Descriptive Scheme is .84

** The total percentage may not be 100% due to rounding.

Focus of Questions

Another comparison of the student questions was carried out in terms of the focus of the questions: SELF, e.g., "Am I wrong?"; OTHER PERSONS, e.g., "Who will help me with this problem?"; OBJECT, e.g., "Where is my course selection sheet?"; SITUATION, e.g., "Did I pass the exams or not?." Table 4 illustrates the focus of resident and non-resident students facing academic and bureaucratic situations. The scheme employed for analyzing the questions to be summarized in Table 4 was the Entity Focus Scheme (CA #4, see Appendix D). The Entity Focus Scheme was developed deductively, and it has the interjudge coding reliability coefficient of .88 (PAI=.88, see Stempel, 1955, and Scott, 1955).

In academic situations, as presented in Table 4 (first and fourth columns), the majority of both resident and non-residents students' questions were focused on SITUATION (respectively: 50.2%, n=135; 56.9%, n=152) in their attempts to bridge the gap they were facing at that point in time. The second major focus of questions for both student groups was SELF (resident students: 20.8%, n=56; non-resident students: 19.9%, n=53). The third major focus of resident students' questions was OTHER PERSONS (16.4%, n=44), while the third major focus for the non-resident students' questions was OBJECT (13.9%, n=37). The fourth focus of resident students' questions was OBJECT (12.6%, n=34), and for the non-resident students' questions, OTHER PERSONS

(9.4%, n=25).

In bureaucratic situations (second and fifth column), SITUATION was the prime focus of questions of both resident and non-resident students (respectively: 65.5%, n=165; 69.4%, n=197). While OTHER PERSONS was the second highest focus of resident students' questions (17.1%, n=43), it was the fourth focus of the non-resident students' questions (7%, n=20). On the contrary, OBJECT was the second highest focus of the non-resident students' questions (12%, n=34), but the fourth focus of the resident students' questions (7.5%, n=19). The third focus of the questions was SELF for both resident and non-resident students (respectively: 9.9%, n=25; 11.6%, n=33).

The third and sixth columns in Table 4 depict the total picture of the focus of questions for resident and non-resident students in both academic and bureaucratic situations. The majority of questions of both resident and non-resident students were focused on SITUATION (respectively: 57.6%, n=300; 63.3%, n=349). The second highest focus of questions for resident students facing both academic and bureaucratic situations was OTHER PERSONS (16.7%, n=87. Meanwhile, the second highest focus of questions for non-resident students facing both academic and bureaucratic situations was SELF (15.6%, n=86). The third and fourth major focus of questions of resident students were, respectively, SELF (15.5%, n=81) and OBJECT (10.2%,

n=53). On the contrary, the third and fourth major focus of questions of non-resident students were, respectively, OBJECT (12.9%, n=71) and OTHER PERSONS (8.2%, n=45).

2. Expected and Actual Uses of Answers

When a student asked a question, usually s/he had a preconceived idea of how an answer would help her/him to move across time and space. If the answer to the question was obtained, s/he might use the answer to help in the way s/he had envisaged, or in a different way than expected. Table 4 provides a clear illustration of how resident and non-resident students perceived the expected and actual use of answers to their questions. For each answer to a question, each student was allowed to report up to two kinds of expected and actual uses of answers. The scheme employed in analyzing data to be presented in Table 5 is the Helps/Uses Scheme (CA #5, see Appendix D). The Helps/Uses Scheme was developed deductively, and it has the interjudge coding reliability coefficient of .85 (PAI=.85, see Stempel, 1955).

Table 5 shows that in academic situations (first and fourth column) both resident and non-resident students expected to use and actually used answers to their questions primarily for gaining understanding, ideas, and pictures of the gap in the problematic situation (respectively: 26.6%, n=117; 23.8%, n=100), e.g., "So that I know what is going

TABLE 5: Comparison of expected and actual helps/uses of answers to questions between resident and non-resident students

Helps/Uses*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
Got understanding, ideas, pictures	117	26.6	79	20.6	196	23.8	100	23.8	91	21.2	191	22.5
Able to plan	38	8.6	74	19.3	112	13.6	43	10.2	64	14.9	107	12.6
Got skills	1	.2	–	–	1	.1	–	–	–	–	–	–
Got started, motivated	42	9.5	21	5.5	63	7.6	36	8.6	31	7.2	67	7.9
Kept going	66	15.0	57	14.8	123	14.9	95	22.6	69	16.0	164	19.3
Got control	20	4.5	18	4.7	38	4.6	16	3.8	12	2.8	28	3.3
Things got calmer, easier	5	1.1	4	1.0	9	1.1	6	1.4	12	2.8	18	2.1
Reached the goal, accomplished things	26	5.9	14	3.6	40	4.8	22	5.2	11	2.6	33	3.9
Got out of a bad situation	24	5.4	17	4.4	41	5.0	10	2.4	11	2.6	21	2.5
Went on to other things	11	2.5	6	1.6	17	2.1	14	3.3	4	.9	18	2.1
Avoided bad situation	20	4.5	20	5.2	40	4.8	6	1.4	24	5.6	30	3.5
Took mind off things	10	2.3	10	2.6	20	2.4	8	1.9	11	2.6	19	2.2
Relaxed, rested	3	.7	3	.8	6	.7	4	.9	8	1.9	12	1.4
Got pleasure	14	3.2	17	4.4	31	3.8	20	4.8	28	6.5	48	5.6
Got support, confirmation and reassurance	34	7.7	32	8.3	66	8.0	24	5.7	42	9.8	66	7.8
Got connected to others	6	1.4	11	2.9	17	2.1	10	2.4	7	1.6	17	2.0
Other, Don't Know & Missing	3	.7	1	.3	4	.5	6	1.4	5	1.2	11	1.3
(n=1674)**	440	99.8	384	100.0	824	99.9	420	99.8	430	100.2	850	100.0

* PAI for Helps/Uses is .85

** Total n=1674 in this table indicates that one respondent was allowed to report one or two kinds of perceived helps/uses of the answer to each question. Also the percentage may not be 100% due to rounding.

127

on."   Both resident and non-resident students also indicated

that they expected to use and actually used answers to their

questions to enable them to keep going and moving in time-

space (respectively: 15%, n=66, 22.6%, n=95), e.g., "So that

I can sit for my exams."   To get started and motivated,

e.g., "So that I can begin reading other materials while

waiting for the module," was the third expected and actual

use of answers according to resident students (9.5%, n=42).

However, it was the fourth expected and actual use of

answers according to non-resident students (8.6%, n=36).

While to be able to plan, e.g., "So that I know what courses

to be taken next semester," was the fourth expected and

actual use of answers for resident students (8.6%, n=38), it

was the third for non-resident students (10.2%, n=43).   Both

student groups seem to agree on getting support,

confirmation and reassurance, e.g., "To make me sure about

the deadline," as the fifth expected and actual use of

answers to their questions in academic situations (resident

students: 7.7%, n=34; non-resident students: 5.7%, n=24).

Other categories of expected and actual use of answer are

represented less frequently in this data set.

In bureaucratic situations, as presented in Table 5

(second and fifth columns), the majority of both resident

and non-resident students expected to use and actually used

answers to their questions for gaining understanding, ideas,

and pictures of the gap (respectively: 20.6%, n=79; 21.2%,

n=91), e.g., "I understand what to do with this problem." Ability to plan, e.g., "Thus, our group can set a time to meet," was the second highest use of answers for resident students. For non-resident students, the second highest expected and actual use of answers was to enable them to keep going across time and space (16%, n=69), e.g., "I can try to do it myself without bothering him anymore." The third expected and actual use of answers for resident students was to enable them to keep going (14.8%, n=57), while for non-resident students it was to enable them to plan (14.9%, n=64). Both student groups perceived getting support, confirmation and reassurance as the fourth use of answers to their questions in bureaucratic situations. Other categories are represented less frequently in this data set.

A similar pattern of expected and actual uses of answers was found in the general comparison of resident and non-resident students facing both academic and bureaucratic situations (third and sixth column). Both resident and non-resident students expected to use and actually used answers to their questions for gaining understanding, ideas, and pictures of the gap in the first place (respectively: 23.8%, n=196; 22.5%, n=191). The second and third highest for both student groups were to enable them to keep going and moving across time-space (resident students: 14.9%, n=123; non-resident students: 19.3%, n=164), and to enable them to plan

(resident students: 13.6%, n=112; non-resident students: 12.6%, n=107). The fourth and fifth highest expected and actual use of answers for resident students were to get support, confirmation and reassurance (8%, n=66), and to get started and motivated (7.6%, n=63). For non-resident students, however, the fourth and fifth highest expected and actual use of answers were to get started and motivated (7.9%, n=67), and to get support, confirmation and reassurance (7.8%, n=66). Other categories were represented in a more or less similar pattern in this data set.

3. Perceived successful and unsuccessful strategies

Those students who were actively pursuing answers to their questions employed many kinds of strategies. Table 6 shows the comparison of perceived successful and unsuccessful strategies used by resident and non-resident students to get answers to their questions. For each question, a student was allowed to report up to two strategies which s/he employed, and whether s/he considered those strategies successful or unsuccessful. The scheme employed in analyzing the data to be presented in Table 6 was the Strategy Scheme (CA#6, see Appendix D). The Strategy Scheme was developed inductively, and it has the interjudge coding reliability coefficient of .92 (PAI=.92, See Stempel, 1955).

Table 6 shows that in academic situations (first and

TABLE 6: Comparison of perceived successful and unsuccessful strategies used by resident and
non-resident students to obtain answers to their questions

Strategies*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
SUCCESSFUL												
Asking somebody – authority	34	10.8	75	27.6	109	18.6	20	7.2	85	32.1	105	19.3
Asking oneself and thinking	35	11.1	16	5.9	51	8.7	23	8.2	5	1.9	28	5.1
Asking something	29	9.2	9	3.3	38	6.5	13	4.6	15	5.6	28	5.1
Reading and Studying	27	8.6	8	2.9	35	5.9	28	10.0	11	4.1	39	7.2
Waiting	–	–	–	–	–	–	–	–	–	–	–	–
Making one's own effort	12	3.8	10	3.7	22	3.7	18	6.5	5	1.9	23	4.2
Asking friends and significant others	94	29.8	74	27.2	168	28.6	62	22.2	29	10.9	91	16.7
Don't care and give up	–	–	–	–	–	–	–	–	–	–	–	–
Carrying out the procedures	1	.3	2	.7	3	.5	1	.4	4	1.5	5	.9
No strategy	–	–	1	.3	1	.2	–	–	1	.4	1	.2
SUBTOTAL	232	73.6	195	71.6	427	72.7	165	59.1	155	58.4	320	58.7

131

TABLE 6 (continued)

Strategies*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
UNSUCCESSFUL												
Asking somebody – authority	13	4.1	33	12.1	46	7.8	10	3.6	35	13.2	45	8.3
Asking oneself and thinking	8	2.5	10	3.7	18	3.1	13	4.7	11	4.2	24	4.4
Asking something	7	2.2	–	–	7	1.2	8	2.9	9	3.4	17	3.1
Reading and Studying	5	1.6	–	–	5	.9	21	7.5	6	2.3	27	4.9
Waiting	1	.3	4	1.5	5	.9	4	1.4	4	1.5	8	1.5
Making one's own effort	7	2.2	3	1.1	10	1.7	10	3.6	4	1.5	14	2.6
Asking friends and significant others	37	11.7	26	9.6	63	10.7	44	15.8	33	12.4	77	14.2
Don't care and give up	2	.6	–	–	2	.3	2	.7	1	.4	3	.5
Carrying out the procedures	1	.3	–	–	1	.2	–	–	–	–	–	–
No strategy	2	.6	1	.3	3	.5	1	.4	6	2.6	7	1.3
SUBTOTAL	83	26.1	77	28.3	160	27.3	113	40.6	109	41.5	222	40.8
Other, Don't Know, and Missing	–	–	–	–	–	–	1	.4	1	.4	2	.4
(n=1131)**	315	99.7	272	99.9	587	100.0	279	100.1	265	100.3	544	99.9

* PAI for Strategies is .92

** Total n=1131 in this table indicates that one respondent was allowed to report one or two kinds of perceived strategies employed to get an answer to each question. Also, the total percentage may not be 100% due to rounding.

fourth columns), both resident and non-resident students perceived that asking friends and significant others was the most successful strategy to get answers to their questions (respectively: 29.8%, n=94; 22.2%, n=62). The second most successful strategy employed by resident students to get answers to their questions was asking oneself and thinking (11.1%, n=35), while the second most successful strategy employed by non-resident students was reading and studying (10%, n=28). The third most successful strategy for resident students was asking somebody with authority (10.8%, n=34), while for non-resident students it was asking oneself and thinking (8.2%, n=23). Other categories of successful strategies were represented in an unequal fashion as shown in this Table, indicating different patterns of perceived successful strategies between resident and non-resident students. However, the most important distinction between resident and non-resident students facing academic situations was that 73.6% (n=232) of the strategies employed by resident students were perceived as successful, whereas only 59.1% (n=165) of the strategies employed by non-resident students were perceived as successful.

It is also interesting to find that, while asking friends and significant others was perceived by both resident and non-resident students to be the most successful strategy in academic situations, it was also perceived to be the most unsuccessful strategy used by both student groups

in their academic situations (respectively: 11.7%, n=37; 15.8%, n=44). Asking somebody with authority was perceived to be the second most unsuccessful strategy employed by resident students (4.1%, n=13). Non-resident students, however, perceived reading and studying to be the second most unsuccessful strategy they had employed to get answers to their questions (7.5%, n=21). Other categories of unsuccessful strategies were perceived differently by resident students and by non-resident students. Such perception is supported by the subtotal of the unsuccessful strategies, which indicates a lower percentage for resident students (26.1%, n=83) and a higher percentage for non-resident students (40.6%, n=113).

Interesting patterns of perceived successful and unsuccessful strategies are found in the case of resident and non-resident students facing bureaucratic situations (second and fifth columns). Resident students perceived two kinds of strategies that they employed in getting answers to their questions as highly successful. Those two strategies were asking somebody with authority (27.6%, n=75) and asking friends and significant others (27.2%, n=74). Non-resident students, however, perceived only one strategy, which was asking somebody with authority, as the most successful strategy employed in getting answers to their questions (32.1%, n=85). Although asking friends and significant others was also represented as the second highest successful

strategy employed by non-resident students (10.9%, n=29), it was not perceived to be as successful as asking somebody with authority. Once again, it seems that resident students perceived their strategies to be more successful (71.6%, n=195) than non-resident students perceived theirs (58.4%, n=155).

Table 6 also illustrates that both resident and non-resident students perceived that asking somebody with authority (respectively: 12.1%, n=33; 13.2%, n=35) and asking friends and significant others (respectively: 9.6%, n=26; 12.4%, n=33) were the most unsuccessful strategies they employed for getting answers to their questions in bureaucratic situations. Resident students perceived their strategies were relatively less unsuccessful than non-resident students in bureaucratic situations (respectively: 28.3%, n=77; 41.5%, n=109).

The overall comparison of perceived successful and unsuccessful strategies between resident and non-resident students (third and sixth columns) in both academic and bureaucratic situations indicates that asking friends and significant others was perceived to be the most successful strategy by resident students (28.6%, n=168), while it was perceived to be only the second most successful strategy by non-resident students (16.7%, n=91). On the contrary, asking somebody with authority was perceived by resident students to be the second most successful strategy (18.6%,

n=109), yet it was the most successful strategy for non-resident students (19.3%, n=105). For resident students, asking oneself and thinking was perceived to be the third most successful strategy (8.7%, n=51). Non-resident students, however, perceived reading and studying to be the third most successful strategy (7.2%, n=39). Both resident and non-resident students had a similar perception that asking friends and significant others was their most unsuccessful strategy (respectively: 10.7%, n=63; 14.2%, n=77). Both student groups also perceived that asking somebody with authority was the second most unsuccessful strategy in academic and bureaucratic situations (respectively: 7.8%, n=46; 8.3%, n=45). The subtotal in Table 6 reveals that resident students have a relatively higher percentage of perceived successful strategies than non-resident students (respectively: 72.7%, n=427; 58.7%, n=320). At the same time, resident students have a relatively lower percentage of perceived unsuccessful strategies than non-resident students (respectively: 27.3%, n=160, 40.8%, n=222).

4. Sources of Answers

Student contacts with a variety of sources available in their environment may often lead to finding answers to their questions. However, there are also occasions where contact with sources resulted in nothing. Therefore, each student

was to report up to three kinds of sources contacted, but only when answers were obtained. Table 7 explicitly describes the sources used by both resident and non-resident students to obtain answers to their questions in academic as well as bureaucratic situations. The scheme employed in analyzing the sources of answers which were presented in Table 7 is the Source Scheme (CA #7, see Appendix D). The Source Scheme was developed deductively with inductive subheadings, and it has the interjudge coding reliability coefficient of .95 (PAI=.95, see Stempel, 1955).

As mentioned earlier, the sources of answers were divided into two major groups: institutional sources and non-institutional sources. As shown in Table 7, it seems that both resident and non-resident students used more non-institutional sources than institutional sources in their academic and bureaucratic situations. In academic situations (first and fourth columns), a relatively large difference can be found in comparing resident and non-resident students, who both used self as the major source of answers to their questions (respectively: 46.2%, n=136; 36.6%, n=82). Friends and significant others were considered the second major source used by both resident and non-resident students in facing academic situations (respectively: 28.9%, n=85; 33%, n=74). Resident students used institutional materials and publications (8.2%, n=24), e.g., handouts, and academic personnel (8.2%, n=24) as their

TABLE 7: Comparison of sources used by resident and non-resident students to obtain answers to their questions

Sources*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
INSTITUTIONAL												
Offices and Officers	17	5.8	43	19.2	60	11.6	15	6.7	86	38.4	101	22.5
Academic Personnel	24	8.2	35	15.6	59	11.4	11	4.9	6	2.7	17	3.8
Books and other materials or publications	24	8.2	16	7.1	40	7.7	20	9.0	13	5.8	33	7.4
Post Office and other offices/officers	-	-	-	-	-	-	2	.9	9	4.0	11	2.5
SUBTOTAL	65	22.2	94	41.9	159	30.7	48	21.4	114	50.9	162	36.2
NON-INSTITUTIONAL												
Self	136	46.2	60	26.8	196	37.9	82	36.6	46	20.5	128	28.6
Friends and significant others	85	28.9	67	29.9	152	29.3	74	33.0	55	24.6	129	28.8
Books and other materials or publications	4	1.4	1	.4	5	.9	4	1.8	7	3.1	11	2.5
Other offices and officers	4	1.4	2	.9	6	1.2	16	7.1	2	.9	18	4.0
SUBTOTAL	229	77.9	130	58.0	359	69.2	176	78.5	110	49.1	286	63.9
Other, Don't Know, and Missing	-	-	-	-	-	-	-	-	-	-	-	-
(n=966)**	294	100.1	224	99.9	518	99.9	224	99.9	224	100.0	448	100.1

* PAI for Sources is .95

** Total n=966 in this table indicates that one respondent was allowed to report up to three kinds of sources used for getting an answer to each question. Also the total percentage may not be 100% due to rounding.

138

third source; while non-resident students only used institutional materials and publications as their third source (9%, n=20). One notable difference occurs in terms of other offices and officers which non-resident students used almost twice as often as resident students (respectively: 7.1%, n=16; 1.4%, n=4).

In bureaucratic situations (second and fifth columns), the pattern of sources used by resident students is somewhat different from the one of non-resident students. The source that was used most by resident students was friends and significant others (29.9%, n=67), while the majority of non-resident students used institutional offices and officers (38.4%, n=86). Self was the second source used by resident students (26.8%, n=60), whereas the second source for non-resident students was friends and significant others (24.6%, n=55). The third source for resident students was institutional offices and officers (19.2%, n=43), and for non-resident students it was self (20.5%, n=46). While resident students showed a high percentage of use of academic personnel as their fourth source (15.6%, n=36) in bureaucratic situations, non-resident students indicated a relatively low percentage of use of academic personnel (2.7%, n=6).

The overall picture (third and sixth column) indicates both resident and non-resident students used more non-institutional sources than institutional ones. It also

shows that self was the most frequently used source by
resident students facing academic, as well as bureaucratic
situations (37.8%, n=196). Non-resident students mostly
used both self, and friends and significant others, when
facing academic as well as bureaucratic situations
(respectively: 28.6%, n=128; 28.8%, n=129). Institutional
offices and officers were used more frequently by non-
resident students (22.5%, n=101) than by resident students
(11.6%, n=60). Resident students, however, used academic
personnel almost three times as often as non-resident
students (respectively: 11.4%, n=59; 3.8%, n=17). Resident
and non-resident students used other institutional materials
and publications with almost the same frequency
(respectively: 7.7%, n=40; 7.4%, n=33).

5. Reasons for not being active

Table 8 provides a comparison of many categories of
reasons, as reported by resident and non-resident students,
that they did not actively pursue answers to their
questions. The scheme employed for analyzing data in Table
8 is the Reasons Scheme (CA #8, see Appendix D). The
Reasons Scheme was developed inductively, and it has
interjudge coding reliability coefficient of .90 (PAI=.90,
see Stempel, 1955).

Table 8 indicates that in academic situations (first
and fourth columns), resident students did not actively try

TABLE 8: Comparison of reasons between resident and non-resident students for not actively trying to get answers to questions

Reasons*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
Time	2	4.3	3	6.0	5	5.2	16	21.3	9	11.8	25	16.6
Money/Cost	-	-	1	2.0	1	1.0	1	1.3	-	-	1	.7
Barrier:												
- fixed and rigid regulations	1	2.2	2	4.0	3	3.1	3	4.0	6	7.9	9	5.9
- possibility	4	8.7	4	8.0	8	8.3	12	16.0	2	2.6	14	9.3
- no other ways	4	8.7	4	8.0	8	8.3	9	12.0	4	5.3	13	8.6
- distance	-	-	-	-	-	-	1	1.3	1	1.3	2	1.3
Self												
- Self-understanding	13	28.3	13	26.0	26	27.1	7	9.3	9	11.8	16	10.6
- Self-proof	1	2.2	-	-	1	1.0	1	1.3	-	-	1	.7
- Self-satisfaction	1	2.2	-	-	1	1.0	5	6.7	1	1.3	6	3.9
Value												
- personal value	3	6.5	1	2.0	4	4.2	4	5.3	3	3.9	7	4.6
- cultural value	-	-	-	-	-	-	-	-	2	2.6	2	1.3
Doesn't matter	6	13.0	6	12.0	12	12.5	1	1.3	3	3.9	4	2.6
Just wait and do nothing	2	4.3	6	12.0	8	8.3	2	2.7	9	11.8	11	7.3
Rhetorical Question	5	10.9	2	4.0	7	7.3	3	4.0	10	13.2	13	8.6
Have other alternatives	1	2.2	5	10.0	6	6.2	4	5.3	12	15.8	16	10.6
Other, Don't Know, & Missing	3	6.5	3	6.0	6	6.2	6	8.0	5	6.6	11	7.3
(n=247)**	46	100.0	50	100.0	96	99.7	75	99.8	76	99.8	151	99.9

* PAI ofr Reasons is .90

** Total n=247 in this table indicates that only 247 cases where resident and non-resident students reported that they decided not to actively try to find answers to their questions. Also, the total percentage may not be 100% due to rounding.

to get answers to their questions, because they mostly came to their own understanding (28.3%, n=13), i.e., they figured out the answers for themselves. For non-resident students, however, their prime reason for not actively pursuing answers was time constraints (21.3%, n=16). Resident students provided two other relatively prominent reasons for not being active: that the question did not matter to the students (13%, n=6), and that their questions were rhetorical questions (10.9%, n=5). Non-resident students also provided two other prominent reasons for not being active in finding answers to their questions: they perceived that there was a barrier in terms of the possibility for getting answers to their questions (16%, n=12), and that there was not any other way to get answers to their questions (12%, n=9). While self-understanding was perceived to be the most prominent reason by resident students in academic situations, it was only perceived as the fourth reason by non-resident students (9.3%, n=7).

In bureaucratic situations (second and fifth columns), different patterns emerge as a result of different reasons given by resident students and non-resident students. Resident students reported that they did not actively try to obtain answers to their questions simply because they came to their own understanding (26%, n=13). For non-resident students, having other alternatives was the prime reason that they did not actively try to get answers to their

questions (15.8%, n=12). Other major reasons reported by resident students were that their questions did not matter (12%, n=6), and that they found other alternatives (10%, n=5). Non-resident students reported their other major reasons for not being active in seeking answers to their questions: their questions were rhetorical (13.2%, n=10); they came to their own understanding (11.8%, n=9); and they had time constraints (11.8%, n=9). Both resident and non-resident students also reported that they just waited for answers and did nothing to find answers to their questions (respectively: 12%, n=6; 11.8%, n=9)

The general picture of sources being used by resident and non-resident students, presented in Table 8 (third and sixth columns), shows that in both academic and bureaucratic situations, self-understanding was the predominant reason for resident students not being active (27.1%, n=26). Time was the prime reason for non-resident students for not actively pursuing answers to their questions in both academic and bureaucratic situations (16.6%, n=25). Another prominent reason for resident students was that their questions did not matter (12.5%, n=12). While resident students indicated that they had two relatively similar reasons for not being active, non-resident students showed more diverse reasons, including self-understanding (10.6%, n=16), having other alternatives (10.6%, n=16), and perceiving no possibility of getting answers (9.3%, n=14).

It was also found that from the total questions of n=1072, 247 cases (23%) were not pursued by either resident or non-resident students in academic and bureaucratic situations. For resident students, there were 96 cases (18.4%) where students reported that they did not actively try to find answers to their questions (total n=521). For non-resident students, however, there were 151 cases (27.4%) where students reported that they did not actively try to find answers to their questions (total n=551).

6. Average of questions answered, time, "activeness," effort, importance, completeness and helpfulness of answers

It was mentioned earlier in this chapter that, in fact, not all students' questions were answered and not all students obtained answers within the same length of time (0=now, 1=later, 2=after the problem is over). Also, not all students actively tried to find answers to their questions (0=not active, 1=active). It was also found that each student expended a different degree of effort in obtaining answers to her/his questions (scale 0-6, 0=no effort at all, 6=the highest effort possible), and each student attached a different degree of importance to getting answers to her/his questions (scale 0-6, 0=not important at all, 6=the most important). In addition, different students perceived different values of completeness (0=partial,

TABLE 9: Comparsion between the resident and non-resident students in terms of the average number of questions being answered, time for obtaining answers, activeness, perceived effort expended for getting answers, perceived importance of getting answers, perceived completeness of the answer obtained, and perceived helpfulness of the answer obtained.

Variables***	Resident Students			Non-Resident Students		
	Academic mean	Bureaucratic mean	TOTAL n**	Academic mean	Bureaucratic mean	TOTAL n**
Answered?	.89	.76	520	.74	.71	551
Time of answers	.28	.22	430	.28	.29	400
Activeness	.83	.80	520	.72	.73	551
Effort	4.48	4.50	424	4.27	4.33	400
Importance	4.74	4.97	520	5.00	5.21	551
Completeness of answer	.58	.61	430	.74	.64	400
Helpfulness of answer	1.59	1.66	430	1.65	1.50	400

** The total n in this column fluctuates because of missing n (n=1), and also because (1) not all the questions being answered, (2) only answered questions have time indicators, (3) respondent did not actively try to get answers in all cases, (4) not everybody made an effort to get answer and (5) perceived the importance of answers for their cases, and (6) only answered questions have completeness and helpfulness indicators.

*** Answered? : 0=No, 1=Yes

   Time of answer : 0=Now, 1=Later, 2=After the problem is over

   Activeness : 0=No, 1=Yes

   Effort : 0-6, 0=no effort at all, 6=the highest effort possible

   Importance : 0-6, 0=not important at all, 6=the most important

   Completeness of answer : 0=partial, 1=complete

   Helpfulness of answer : 0=not helpful, 1=helpful but not as expected, 2=helpful as expected

145

1=complete) and helpfulness of an answer (0=not helpful, 1=helpful but not as expected, 2=helpful as expected). Table 9 presents the comparison between the resident and non-resident students in terms of the average number of questions being answered, time obtaining answers, "activeness," perceived effort expended for getting answers, perceived importance in obtaining answers, and perceived completeness and helpfulness of the answers obtained, both in academic and bureaucratic situations. The number presented in Table 9 indicates the mean or the average of the variables.

Table 9 summarizes academic situations (first and fourth columns), where the average number (mean) of resident students' questions being answered (.89) is relatively higher than for non-resident students (.74). This fact means that 89% of resident students' questions were answered, while only 74% of non-resident students' questions were answered. The time for obtaining answers for resident students was the same as for non-resident students (.28). In terms of being active, it seems that resident students were relatively more active (.83) than non-resident students (.72). Also, resident students expended relatively more effort (4.48) than non-resident students (4.27). However, resident students perceived obtaining answers to their questions was relatively less important (4.74) than non-resident students (5.00). Moreover, resident students'

perceptions of the completeness of the answers obtained was relatively lower (.58) than non-resident students' perceptions (.74). Finally, resident students' perceptions of the helpfulness of the answers obtained were also relatively lower (1.59) than non-resident students' perceptions (1.65).

In bureaucratic situations (second and fifth columns), the average of resident students' questions which were answered (.76) was relatively similar to the average of non-resident students' questions (.71). This means that 76% of the resident students' questions were answered, and 71% of non-resident students' questions were answered. To a certain extent, resident students obtained answers to their questions (.22) faster than non-resident students (.29). In terms of being active, it seems that resident students were relatively more active in trying to find answers to their questions (.80) than non-resident students (.73). Furthermore, it was found that resident students expended relatively more effort in trying to find answers to their questions (4.50) than non-resident students (4.33). However, resident students perceived answers to their questions as relatively less important (4.97) than non-resident students (5.21). Resident students' perception of the completeness of answers to their questions was relatively similar to the non-resident students' perception (.61 compared to .64). Finally, resident students'

perceptions of the helpfulness of answers to their questions was relatively higher than non-resident students' perceptions.

Failure Analysis

This part of the discussion will elaborate and focus on the patterns that emerged between resident and non-resident students when their questions went unanswered. So far, the discussion of research findings in this chapter has been focused on the general issues of the patterns of information seeking and use behaviors of resident and non-resident students, and of similarities and differences between the resident and non-resident students' patterns of information seeking and use behaviors, without making a distinction of whether or not the questions being analyzed were answered. As a matter of fact, there were a number of questions of both resident and non-resident students in academic and bureaucratic situations that were not answered (n=241). It is through a thorough and elaborate analysis of those unanswered questions that this study will be able to reveal more insights which are intended to serve as a guide and a design framework for educators, administrators, and designers of information systems for both student groups in conventional and distance education systems.

Within the following discussion, the "unanswered questions" are used as failure indicators. The unanswered

questions were analyzed in terms of their: (1) description (aboutness), (2) nature of questions (5W), (3) focus, (4) expected helps/uses, (5) perceived unsuccessful strategies employed to get answers, (6) reasons for not actively trying to get answers, and (7) the average degree of being active, (8) effort expended and (9) perceived importance of getting answers to questions. The following seven Tables depict the comparison between resident and non-resident students in academic and bureaucratic situations in terms of their unanswered questions. In this case of comparison, percentages are the most useful indicators for comparing the resident and non-resident students, since the results of the analysis of the unanswered questions may present a quite small number of n. This small number of n is considered worth mentioning because it is broken down from the total number of unanswered questions, which is large enough to be analyzed.

1. Range of unanswered questions of resident and non-resident university students

Question Descriptions

Table 10 presents the description of the unanswered questions of resident and non-resident students both in academic and bureaucratic situations. The description of questions in Table 10 simply means the topic of the

TABLE 10: Comparison of description (aboutness) of unanswered questions between resident and non-resident students

Description*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
SELF												
- Self-evaluation	5	16.7	5	8.3	10	11.1	3	4.3	4	4.9	7	4.6
- Self-ability	5	16.7	2	3.3	7	7.8	11	15.7	4	4.9	15	9.9
- Time Management	-	-	4	6.7	4	4.4	3	4.3	5	6.2	8	5.3
ACADEMIC MATTERS												
- Grades	-	-	7	11.7	7	7.8	5	7.1	7	8.6	12	7.9
- Course Content	1	3.3	2	3.3	3	3.3	18	25.7	2	2.5	20	13.2
- Regulations and Procedures	-	-	1	1.7	1	1.1	3	4.3	5	6.2	8	5.3
- Academic Support	2	6.7	1	1.7	3	3.3	8	11.4	9	11.1	17	11.3
- Intra and Extra Curriculum	1	3.3	-	-	1	1.1	-	-	-	-	-	-
ADMINISTRATIVE MATTERS												
- Registration	1	3.3	6	10.0	7	7.8	-	-	13	16.0	13	8.6
- Logistics	-	-	-	-	-	-	2	2.9	12	14.8	14	9.3
- Financial Aid	-	-	4	6.7	4	4.4	-	-	-	-	-	-
- Sanctions	1	3.3	3	5.0	4	4.4	-	-	-	-	-	-
- Grade Reports	-	-	2	3.3	2	2.2	-	-	1	1.2	1	.7
STRATEGY	7	23.3	2	3.3	9	10.0	9	12.9	8	9.9	17	11.3
PERSONNEL												
- Academic Personnel	3	10.0	13	21.7	16	17.8	1	1.4	-	-	1	.7
- Administrative and Support Personnel	1	3.3	3	5.0	4	4.4	3	4.3	6	7.4	9	6.0
SIGNIFICANT OTHERS												
- Friends	3	10.0	5	8.3	8	8.9	3	4.3	4	4.9	7	4.6
- Family	-	-	-	-	-	-	1	1.4	-	-	1	.7
Other, Don't Know, and Missing	-	-	-	-	-	-	-	-	1	1.2	1	.7
(n=241)**	30	99.9	60	100.0	90	99.8	70	100.0	81	99.8	151	100.1

* PAI for Descriptive Scheme is .84

** The total percentage may not be 100% due to rounding.

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unanswered questions. The scheme employed for analyzing the range of unanswered questions in Table 10 is the Descriptive Scheme (CA #2, see Appendix D). The Descriptive Scheme was developed inductively, and it has the interjudge coding reliability coefficient of .84 (PAI=.84, see Stempel, 1955).

Table 10 indicates that 241 questions (22.5%) of the total 1072 questions were unanswered, 90 questions (17.3%) of the resident students and 151 questions (27.4%) of non-resident students. Table 10 also shows that in academic situations (first and fourth columns), the majority of resident students' questions that went unanswered were about strategy (23.3%, n=7), e.g., "What should I do to study better?," while the majority of non-resident students' questions that went unanswered were about course content (25.7%, n=18), e.g., "What is the meaning of the explanation of theory X presented in this module?." In addition, resident students indicated their top four concerns that went unanswered were self-evaluation (16.7%, n=5), e.g., "What is wrong with me?"; self-ability (16.7%, n=5), e.g., "Do I have to drop out of the program?"; academic personnel (including instructors, professors, academic advisors, and teaching assistants) (10%, n=3), e.g., Why did the instructor not answer my question?"; and friends (10%, n=3), e.g., "Will my friends agree to study together for the exams?." For non-resident students, there were three other major concerns that went unanswered, that is self ability

(15.7%, n=11), e.g., "Am I too old for this math course?"; strategy (12.9%, n=9), e.g., "How can I study better while being in the office?"; and academic support (11.4%, n=8), e.g., "Is there somebody who I can ask for helping me with these econometric problems?."

A different pattern of question descriptions can be found as a result of comparing resident and non-resident students in their bureaucratic situations. In bureaucratic situations (second and fifth columns), the major concern of resident students that went unanswered was about academic personnel (21.7%, n=13), e.g., "Why was my advisor not in his office during his office hour?." For non-resident students, the biggest concern that went unanswered was about registration (16%, n=13), e.g., "Why are they still asking my tuition receipt for registration?." Resident students had four other major concerns that went unanswered, including grades (11.7%, n=7), e.g., "Will I get a good grade in this course?"; registration (10%, n=6), e.g., "Why did they not approve my registering for 20 credit hours?"; friends (8.3%, n=5), e.g., "Why are my friends allowed to take these two courses concurrently?," and self- evaluation (8.3%, n=5), e.g., "Why am I thinking like that?." Non-resident students also had four other major concerns that went unanswered, including logistics (14.8%, n=12), e.g., "Where are the individual assignment forms for Introduction to Microeconomics?"; academic support (11.1%, n=9), "Whom

shall I ask for help?"; strategy (9.9%, n=8), e.g., "What
shall I do, so that I can still be an UT students while
being in other country?"; and grades (8.6%, n=7), e.g.,
"When will the Central Office announce the students' grades
of last semester?."

Overall (third and sixth columns), the top four major
concerns of resident students that went unanswered were
about academic personnel (17.8%, n=16), self-evaluation
(11.1%, n=10), strategy (10%, n=9), and friends (8.9%, n=8).
The top six major concerns of non-resident students were
about course content (13.2%, n=20), academic support (11.3%,
n=17), strategy (11.3%, n=17), self ability (9.9%, n=15),
logistics (9.3%, n=14), and registration (8.6%, n=13).

Nature of Questions (5W)

Table 11 shows the perspective of students' questions,
in terms of their nature (5W): WHEN, e.g., "In which
semester will I be allowed to take this statistics course?";
WHERE, e.g., "From where can I get my advisor's phone
number?"; WHY, e.g., "Why did I get bad grade from her?";
HOW, e.g., "How should I answer this questions ?"; WHO,
e.g., "Will my friends help me?"; WHAT, e.g., "Are there any
additional courses offered this semester?." The scheme
employed for analyzing the questions presented in Table 11
is the 5W Scheme (CA #3, see Appendix D). The 5W Scheme was
developed deductively, and it has the interjudge coding

reliability coefficient of .95 (PAI=.95, see Stempel, 1955, and Scott, 1955).

Table 11 indicates that in academic situations (first and fourth columns), the questions of both resident and non-resident students which went unanswered were mostly WHAT (respectively: 56.7%, n=17; 47.1%, n=33). HOW and WHY were the second and third types of questions of both resident and non-resident questions which went unanswered (respectively: HOW: 20%, n=6; 25.7%, n=18; WHY: 16.7%, n=5; 14.3%, n=10). In bureaucratic situations (second and fifth columns), most of the resident and non-resident students' questions which went unanswered were also WHAT questions (respectively: 55%, n=33; 50.6%, n=41). While there was one other distinctive type of resident students' questions that went unanswered: WHY (13.3%, n=8), there were two other distinctive types of non-resident students' questions that went unanswered: HOW (21%, n=17), and WHY questions (13.6%, n=11).

The overall picture presented in Table 11 (third and sixth columns) illustrates that the nature of both resident and non-resident students' questions that went unanswered were primarily WHAT questions (respectively: 55.6%, n=50; 49%, n=74). The other type of resident students' questions that went unanswered were WHY (14.4%, n=13) questions and HOW questions (12.2%, n=11). The other type of non-resident students' questions that went unanswered were HOW questions (23.2%, n=35) and WHY questions (13.9%, n=21).

TABLE 11: Comparison of nature of unanswered questions (5W) between resident and non-resident students

Nature of Question* (5W)	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
WHEN	–	–	5	8.3	5	5.6	2	2.9	5	6.2	7	4.6
WHERE	–	–	4	6.7	4	4.4	4	5.7	3	3.7	7	4.6
WHY	5	16.7	8	13.3	13	14.4	10	14.3	11	13.6	21	13.9
HOW	6	20.0	5	8.3	11	12.2	18	25.7	17	21.0	35	23.2
WHO	2	6.7	5	8.3	7	7.8	3	4.3	4	4.9	7	4.6
WHAT	17	56.7	33	55.0	50	55.6	33	47.1	41	50.6	74	49.0
Other, Don't Know, & Missing	–	–	–	–	–	–	–	–	–	–	–	–
(n=241)**	30	100.1	60	99.9	90	100	70	100	81	100	151	99.9

* PAI for Nature of Questions (5W) is .95

** The total percentage may not be 100% due to rounding.

TABLE 12: Comparison between the entity focus of unanswered questions of resident and non-resident students

Entity Focus*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
SELF	8	26.7	4	6.7	12	13.3	18	25.7	11	13.6	29	19.2
OTHER PERSON	6	20.0	11	18.3	17	18.9	2	2.9	4	4.9	6	4.0
OBJECT	1	3.3	3	5.0	4	4.4	7	10.0	8	9.9	15	9.9
SITUATION	15	50.0	42	70.0	57	63.3	43	61.4	58	71.6	101	66.9
Other, Don't Know, & Missing	–	–	–	–	–	–	–	–	–	–	–	–
(n=241)**	30	100.0	60	100.0	90	99.9	70	100.0	81	100.0	151	100.0

* PAI for Descriptive Scheme is .84

** The total percentage may not be 100% due to rounding.

155

Focus of Questions

The third analysis of the students' questions was on the entity focus of the questions: SELF, e.g., "Will I be able to finish my study?"; OTHER PERSONS, e.g., "Who is the tutor for this course?"; OBJECT, e.g., "Where can I find the textbook?"; SITUATION, e.g., "Why does this procedure keep on changing?." Table 12 illustrates the comparison of the entity focus between the resident and non-resident students' questions. The scheme employed for analyzing the questions to be summarized in Table 12 is the Entity Focus Scheme (CA #4, see Appendix D). The Entity Focus Scheme was developed deductively, and it has the interjudge coding reliability coefficient of .88 (PAI=.88, see Stempel, 1955, and Scott, 1955).

In academic situations (first and fourth columns of Table 12), the majority of resident and non-resident students' questions that went unanswered were focused on SITUATION (respectively: 50%, n=15; 61.4%, n=43). The second category of resident and non-resident students' questions that went unanswered were focused on SELF (respectively: 26.7%, n=8; 25.7%, n=18). The third and fourth focus of resident students' questions which went unanswered were, respectively, OTHER PERSONS (20%, n=6) and OBJECT (3.3%, n=1). The third and fourth focus of non-resident students' questions were, respectively, OBJECT (10%, n=7) and OTHER PERSONS (2.9%, n=2).

In bureaucratic situations (second and fifth columns), Table 12 shows that the majority of resident and non-resident students' questions that went unanswered were focused on SITUATION (respectively: 70%, n=42; 71.6%, n=58). While the second level of resident students' questions were focused on OTHER PERSONS (18.3%, n=11), the second level of non-resident students' questions that went unanswered were focused on SELF (13.6%, n=11). SELF (6.7%, n=4) and OBJECT (5%, n=3) were respectively the third and fourth ranking focuses of the unanswered questions of the resident students in bureaucratic situations. OBJECT (9.9%, n=8) and OTHER PERSONS (4.9%, n=4) were respectively the third and fourth ranking focuses of the unanswered questions of the non-resident students in bureaucratic situations.

The total picture (third and sixth columns) of the entity focus of resident and non-resident students' questions in both academic and bureaucratic situations indicates that 63.3% (n=57) of the resident students' questions as well as 66.9% (n=101) of the non-resident students' questions were focused on SITUATION. The second major focus of resident students' questions was OTHER PERSONS (18.9%, n=17), while for non-resident students it was SELF (19.2%, n=29). For resident students, the third and fourth ranking focuses of their questions were SELF (13.3%, n=12) and OBJECT (4.4%, n=4). For non-resident students, the third and fourth ranking focuses were OBJECT

(9.9%, n=15) and OTHER PERSONS (4%, n=6).

2. Expected Uses of Answers

Even for their unanswered questions, at the initial stage students had ideas of expected uses of answers to their questions. Table 13 demonstrates the perceived expected uses of answers to unanswered questions of resident and non-resident students in academic and bureaucratic situations. For each question, each student was allowed to report up to two kinds of expected uses of answers. The scheme employed in analyzing data to be presented in Table 13 is the Helps/Uses Scheme (CA #5, see Appendix D). The Helps/Uses Scheme was developed deductively, and it has the interjudge coding reliability coefficient of .85 (PAI=.85, see Stempel, 1955).

Table 13 clearly shows that in academic situations (first and fourth columns), most answers to resident students' questions that went unanswered were expected to be useful for gaining understanding, ideas, and pictures of the gap itself (30.3%, n=10), e.g., "So that I know the steps in using this formula." However, most answers to non-resident students' questions that went unanswered were expected to be useful to keep them going across time and space (22.2%, n=18), e.g., "Thus, I don't have to wait to be helped." Resident students also expected that they would have been able to use answers to their unanswered questions in two

i

TABLE 13: Comparison of expected helps/uses of answers to the unanswered questions between resident and non-resident students

Helps/Uses	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
Got understanding, ideas, pictures	10	30.3	15	23.4	25	25.8	14	17.3	18	19.4	32	18.4
Able to plan	2	6.0	15	23.4	17	17.5	6	7.4	19	20.4	25	14.4
Got skills	-	-	-	-	-	-	-	-	-	-	-	-
Got started, motivated	4	12.1	2	3.1	6	6.2	5	6.2	6	6.5	11	6.3
Kept going	4	12.1	5	7.8	9	9.3	18	22.2	12	12.9	30	17.2
Got control	3	9.1	5	7.8	8	8.2	4	4.9	4	4.3	8	4.6
Things got calmer, easier	1	3.0	1	1.6	2	2.1	-	-	6	6.5	6	3.4
Reached the goal, accomplished things	2	6.0	5	7.8	7	7.2	4	4.9	1	1.1	5	2.9
Got out of a bad situation	2	6.0	4	6.3	6	6.2	4	4.9	3	3.2	7	4.0
Went on to other things	-	-	1	1.6	1	1.0	3	3.7	1	1.1	4	2.3
Avoided bad situation	1	3.0	2	3.1	3	3.1	-	-	5	5.4	5	2.9
Took mind off things	-	-	2	3.1	2	2.1	2	2.5	2	2.2	4	2.3
Relaxed, rested	-	-	-	-	-	-	-	-	1	1.1	1	.6
Got pleasure	1	3.0	2	3.1	3	3.1	4	4.9	5	5.4	9	5.2
Got support, confirmation and reassurance	2	6.0	5	7.8	7	7.2	10	12.3	7	7.6	17	9.8
Got connected to others	-	-	-	-	-	-	2	2.5	1	1.1	3	1.7
Other, Don't Know & Missing	1	3.0	-	-	1	1.0	5	6.2	2	2.2	7	4.0
(n=271)**	33	99.6	64	99.9	97	100.0	81	99.9	93	100.4	174	100.0

* PAI for Helps/Uses is .85

** Total n=271 in this table indicates that one respondent was allowed to report one or two kinds of perceived helps/uses of the answer to each question. Also, the total percentage may not be 100% due to rounding.

159

additional major ways: to get started and motivated (12.1%, n=4), e.g., "So that it will speed up my study," and to keep going (12.1%, n=4), e.g., "That helps me to look for the answer I need." Similar to resident students, the non-resident students also expected that they would have been able to use answers to their unanswered questions in two other different ways: to gain understanding, ideas and pictures of the gap (17.3%, n=14), e.g., "To help me understand the module," and to obtain support, confirmation and reassurance (12.3%, n=10), e.g., "To make me certain of my strategy."

In bureaucratic situations, resident students expected that most answers to their unanswered questions would have been useful for gaining understanding, ideas and pictures of the gap (23.4%, n=15), e.g., "I understand his reason for giving me bad grade," and for being able to plan (23.4%, n=15), e.g., "So that I can manage my time for studying next semester." Non-resident students facing bureaucratic situations expected at the most that answers to their unanswered questions would have been useful for enabling them to plan (20.4%, n=19), e.g., "At least, I know approximately when I will graduate", and for gaining understanding, ideas, and pictures of their gap (19.4%, n=18), e.g., "To get information about the deadline." It was also found that there were five other notable expected uses of answers to resident students' questions that went

unanswered, including to keep going, e.g., "I can take care of the requirements," to get control, e.g., "To hide my weaknesses," to reach the goal and accomplish things, e.g., "I can study better and get good grade," and to get support, confirmation and reassurance, e.g., "That helps me make sure" (each category: 7.8%, n=5). Non-resident students had two other different expected uses of answers to questions that went unanswered, including to enable them to keep going (12.9%, n=12), e.g., "I can study more and pass the exams," and to obtain support, confirmation and reassurance (7.6%, n=7), e.g., "That confirms my belief."

The overall picture of perceived expected uses of answers reveal different expectations between resident and non-resident students concerning answers to their unanswered questions in both academic and bureaucratic situations. Both resident and non-resident students indicated that primarily they expected to have been able to use answers to their unanswered questions for gaining understanding, ideas and pictures (respectively: 25.8%, n=25; 18.4%, n=32). Second, resident students also indicated that they would have used answers to their questions to enable them to plan (17.5%, n=17). Non-resident students, however, indicated that they would have used answers to their unanswered questions to enable them to keep going (17.2%, n=30). Two other major expected uses of answers to unanswered questions were reported by resident students as follows: to enable

them to keep going (9.3%, n=9) and to get control (8.2%,
n=8). Non-resident students also reported two other major
expected uses of answers to their unanswered questions which
include enabling them to plan (14.4%, n=25) and obtaining
support, confirmation, and reassurance (9.8%, n=17). Other
categories were represented less frequently in this data
set.

3. Perceived Unsuccessful Strategies

Regarding unanswered questions, both resident and non-
resident students reported their perceived unsuccessful
strategies employed when trying to find answers to their
questions. For each unanswered question, each student was
allowed to report up to two perceived unsuccessful
strategies that they employed. It was only those students
who claimed to be actively pursuing answers to their
unanswered questions who had to report their perceived
unsuccessful strategies. Table 14 essentially summarizes
the perceived unsuccessful strategies employed by resident
and non-resident students in both academic and bureaucratic
situations. The scheme employed in analyzing the data
presented in Table 14 was the Strategy Scheme (CA #6, see
Appendix D). The Strategy Scheme was developed inductively
and it has the interjudge coding reliability coefficient of
.92 (PAI=.92, see Stempel, 1955).

Table 14 shows that in academic situations (first and

TABLE 14: Comparison of perceived unsuccessful strategies used by resident and non-resident students who were trying to get answers to their unanswered questions.

Strategies*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
UNSUCCESSFUL												
Asking somebody - authority	2	11.1	20	54.0	22	40.0	5	15.1	18	31.0	23	25.3
Asking oneself and thinking	1	5.6	7	18.9	8	14.5	3	9.1	10	17.2	13	14.3
Asking something	-	-	-	-	-	-	3	9.1	5	8.6	8	8.8
Reading and Studying	1	5.6	-	-	1	1.8	8	24.2	5	8.6	13	14.3
Waiting	-	-	2	5.4	2	3.6	-	-	1	1.7	1	1.1
Making one's own effort	3	16.7	1	2.7	4	7.3	2	6.1	2	3.4	4	4.4
Asking friends and significant others	10	55.6	7	18.9	17	30.9	11	33.3	14	24.1	25	27.5
Don't care and give up	-	-	-	-	-	-	-	-	-	-	-	-
Carrying out the procedures	-	-	-	-	-	-	-	-	-	-	-	-
No strategy	1	5.6	-	-	1	1.8	1	3.0	3	5.2	4	4.4
Other, Don't Know, and Missing	-	-	-	-	-	-	-	-	-	-	-	-
(n=146)**	18	100.2	37	99.9	55	99.9	33	99.9	58	99.8	91	100.1

* PAI for Strategies is .92

** Total n=146 in this table indicates that one respondent was allowed to report one or two kinds of perceived unsuccessful strategies employed when trying to get answers to each unanswered question. Also, the percentage may not be 100% due to rounding.

163

fourth columns) the most unsuccessful strategy for resident students was asking friends and significant others (55.6%, n=10). Such a condition also applies to non-resident students who perceived asking friends and significant others as the most unsuccessful strategy (33.3%, n=11) in their academic situations. Resident students considered two other major unsuccessful strategies: to be making one's own effort (16.7%, n=3), and asking somebody with authority (11.1%, n=2). Non-resident students, however, reported four other major unsuccessful strategies, which include reading and studying (24.2%, n=8), asking somebody with authority (15.1%, n=5), asking oneself and thinking (9.1%, n=3), and asking something (9.1%, n=3).

In bureaucratic situations (second and fifth columns), resident students considered asking somebody with authority was a highly unsuccessful strategy (54%, n=20). This condition, however, also applies to non-resident students who perceived that asking somebody with authority was highly unsuccessful (31%, n=18). Two other major strategies mentioned as unsuccessful strategies by resident students were asking oneself and thinking (18.9%, n=7), and asking friends and significant others (18.9%, n=7). Non-resident students mentioned four other major strategies which were perceived to be unsuccessful including asking friends and significant others (24.1%, n=14), asking oneself and thinking (17.2%, n=10), asking something (8.6%, n=5), and

reading and studying (8.6%, n=5).

The total picture (third and sixth columns) indicates there are differences between perceived unsuccessful strategies employed by resident and non-resident students in both academic and bureaucratic situations. For resident students, asking somebody with authority had been the most unsuccessful strategy (40%, n=22). For non-resident students, asking friends and significant others had been the most unsuccessful strategy (27.5%, n=25). Other major strategies perceived as unsuccessful by resident students were asking friends and significant others (30.9%, n=17), asking oneself and thinking (14.5%, n=8), and making one's own effort (7.3%, n=4). Non-resident students perceived four other major unsuccessful strategies: to be asking somebody with authority (25.3%, n=23), asking oneself and thinking (14.3%, n=13), reading and studying (14.3%, n=13), and asking something (8.8%, n=8).

4. Reasons for not being active

Some students had their own reasons for not trying actively to find answers to their unanswered questions. Table 15 summarizes many categories of reasons reported by resident and non-resident students for not being active in trying to find answers to their unanswered questions in both academic and bureaucratic situations. The scheme employed for analyzing data presented in Table 15 is the Reasons

TABLE 15: Comparison of reasons between resident and non-resident students for not actively trying to get answers to their unanswered questions

Reasons*	Resident Students						Non-Resident Students					
	Academic		Bureaucratic		TOTAL		Academic		Bureaucratic		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
Time	1	7.7	2	8.7	3	8.3	9	21.9	2	7.4	11	16.2
Money/Cost	-	-	1	4.3	1	2.8	1	2.4	-	-	1	1.5
Barrier:												
- fixed and rigid regulation	-	-	1	4.3	1	2.8	3	7.3	1	3.7	4	5.9
- possibility	3	23.0	3	13.0	6	16.7	9	21.9	1	3.7	10	14.7
- no other ways	2	15.4	-	-	2	5.6	4	9.8	3	11.1	7	10.3
- distance	-	-	-	-	-	-	1	2.4	1	3.7	2	2.9
Self												
- Self-understanding	-	-	1	4.3	1	2.8	5	12.2	-	-	5	7.4
- Self-proof	-	-	-	-	-	-	-	-	-	-	-	-
- Self-satisfaction	-	-	-	-	-	-	-	-	-	-	-	-
Value												
- personal value	1	7.7	1	4.3	2	5.6	3	7.3	-	-	3	4.4
- cultural value	-	-	-	-	-	-	-	-	-	-	-	-
Doesn't matter	2	15.4	5	21.7	7	19.4	-	-	2	7.4	2	2.9
Just wait and do nothing	1	7.7	3	13.0	4	11.1	1	2.4	7	25.9	8	11.8
Rhetorical Question	1	7.7	1	4.3	2	5.6	1	2.4	4	14.8	5	7.4
Have got other alternatives	-	-	4	17.4	4	11.1	3	7.3	4	14.8	7	10.3
Other, Don't Know & Missing	2	15.4	1	4.3	3	8.3	1	2.4	2	7.4	3	4.4
(n=104)**	13	100.0	23	99.6	36	100.1	41	99.7	27	99.9	68	100.1

* PAI of Reasons is .90

** Total n=104 in this table indicates that only 104 cases where resident and non-resident students reported that they decided not to actively try to find answer to their questions. Also, the total percentage may not be 100% due to rounding.

166

Scheme (CA #8, see Appendix D). The Reasons Scheme was developed inductively, and it has the interjudge coding reliability coefficient of .90 (PAI=.90, see Stempel, 1955).

Table 15 shows that in academic situations (first and fourth columns), the main reason for resident students not being active in pursuing answers to their unanswered questions was a barrier of possibility (23%, n=3). Non-resident students claimed two main reasons for their not being active: time constraints (21.9%, n=9) and a barrier of possibility (21.9%, n=9). Furthermore, resident students reported two other major reasons for them not being active, including perceiving no other way (15.4%, n=2) and that their questions did not matter (15.4%, n=2). Non-resident students also reported two other major reasons for them not being active, including having had their own understanding (12.2%, n=5) and perceiving no other ways of getting answers (9.6%, n=4).

Facing bureaucratic situations (second and fifth columns), resident students claimed that reasons for them not being active were that their questions did not matter (21.7%, n=5); they have other alternatives (17.4%, n=4), they perceived barrier of possibility (13%, n=3). For resident students, their three other major reasons were For non-resident students, their three other major reasons were that their questions were rhetorical (14.8%, n=4), having other alternatives (14.8%, n=4), and perceiving no

other ways (11.1%, n=3). Both student groups also reported that they just waited for answers and did nothing to find answers to their questions (respectively: 13%, n=3; 25.9%, n=7).

The overall picture (third and sixth columns) indicates that there were four major reasons reported by resident students who did not actively try to find answers to their unanswered questions. Those reasons were that their unanswered questions did not matter (19.4%, n=7), barrier of possibility (16.7%, n=6), and having other alternatives (11.1%, n=4). Non-resident students, however, reported five major reasons for not being active in finding answers to their unanswered questions, including time (16.2%, n=11), barrier of possibility (14.7%, n=10), just waited and did nothing (11.8%, n=8), perceiving no other ways (10.3%, n=7), and having other alternatives (10.3%, n=7). Furthermore, both resident and non-resident students reported that in some cases they just waited for answers and did nothing to find answers to their questions (respectively: 11.1%, n=4; 11.8%, n=8).

It is also worth mentioning that out of the total of 241 chances of trying actively to find answers to 241 unanswered questions, it was found that 104 chances (43.2%) were not pursued. Out of 90 chances that resident students had for actively trying to find answers to their total of 90 unanswered questions, 36 chances (40%) were not taken. For

non-resident students, out of their 151 chances of actively
making an effort to find answers to 151 unanswered
questions, 68 chances (45%) were not used.

5. <u>Average of "activeness," effort expended, and perceived</u>
   <u>importance of answers</u>

Regarding unanswered questions, students were asked
only to indicate whether they were actively pursuing answers
to their questions, how much effort they expended if they
were active, and how important it was for them to get
answers to their questions. Table 16 presents the
comparison between the resident and non-resident students in
terms of the average degree of "activeness" of trying to
obtain answers to their unanswered questions, perceived
effort expended trying to get answers, and perceived
importance of getting an answer to each of their unanswered
questions. The numbers presented in Table 16 indicate the
mean or average of the variables.

It is clearly shown in Table 16 that, in academic
situations (first and fourth columns), resident students
were relatively more active in pursuing answers to their
unanswered questions. Fifty-seven percent of resident
students were active, while only 41% of non-resident
students were active. On the average, resident students
expended relatively lower effort (3.35) trying to obtain
answers to their unanswered questions than non-resident

TABLE 16: Comparison between the resident and non-resident students in terms of
the average of activeness of trying to get answers to their unanswered
questions, perceived effort expended for trying to get answers, perceived
importance of getting answers to each of their unanswered questions.

Variables***	Resident Students			Non-Resident Students		
	Academic mean	Bureaucratic mean	TOTAL n**	Academic mean	Bureaucratic mean	TOTAL n**
Activeness	.57	.58	90	.41	.67	151
Effort	3.35	4.23	52	4.07	4.04	83
Importance	3.70	4.45	90	4.54	5.04	151

** The total n in this column fluctuates because not all respondents actively tried to
to get answers to all cases of unanswered questions, (2) not everybody made efforts
to get answers and (3) perceived the importance of answers to their unanswered
questions.

*** Activeness : 0=No, 1=Yes

Effort : 0-6, 0=no effort at all, 6=the highest effort possible

Importance : 0-6, 0=not important at all, 6=the most important

students did (4.07). This condition also applies to the perceived importance of obtaining answers to their unanswered questions. Resident students' perceptions were relatively lower (3.70) than non-resident students' perceptions in terms of the importance of obtaining answers to their unanswered questions (4.54).

In bureaucratic situations (second and fifth columns of Table 16), resident students, on average, were found to be relatively less active than non-resident students in trying to find answers to their unanswered questions. Only 58% of resident students were active, while 67% of non-resident students were active. In terms of effort expended, it seems that resident students expended an amount of effort (4.23) more or less equal to that expended by non-resident students (4.04). However, the average of resident students' perceptions in terms of the importance in getting answers to their unanswered questions was also lower (4.45) than non-resident students' perceptions (5.04).

Summary

The findings of this study have revealed a rich, elaborate and detailed description of information seeking and use behaviors of resident and non-resident university students in both academic and bureaucratic situations. The detailed descriptions were presented through two series of tables in this section. Tables 2 - 9 picture the

information seeking and use behaviors of resident and non-resident students. Tables 10 - 16 present a closer look into the failures, problems, and obstacles which were encountered by both resident and non-resident students facing their academic and bureaucratic situations.

The elaboration and analysis carried out in this section clearly indicates that there are similarities and differences between resident students, and non-resident students facing both academic and bureaucratic situations, especially in terms of the description of the students' questions; the nature of the students' questions (5W); the entity focus of the students' questions; the expected and actual uses of answers to their questions; the strategies used to obtain answers to questions; the sources used for obtaining answers to their questions; the reasons for not actively trying to obtain answers to their questions; the number of questions answered; the average time of to obtain answers; the average degree of their "activeness"; the average degree of effort expended to find answers; the average perceived importance in obtaining answers to their questions; and the average perceived completeness and helpfulness of the answers to their questions once those answers were obtained.

The next chapter provides further analysis and discusses the interpretation of each major point of the findings. These discussions are addressed to educators,

administrators, and information system designers in tertiary

education in Indonesia and in other applicable settings.
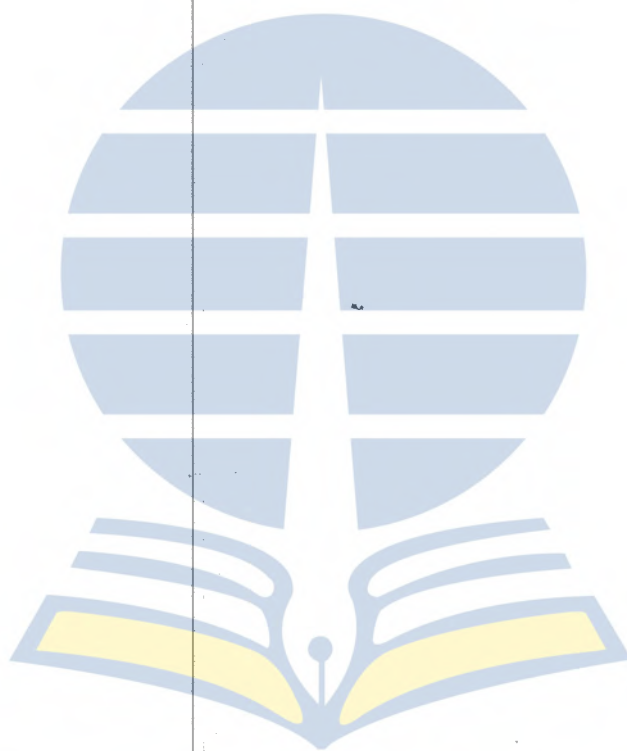
CHAPTER FIVE

Summary of Findings, Discussion,
Limitations, Conclusions and Recommendations

Employing the Sense-Making approach, this study has examined the information seeking and use behaviors of resident and non-resident university students in Indonesia. Specifically, it has focused on the similarities and differences in information seeking and use behaviors between the two student groups.

This chapter offers a summary of the similarities, differences, and some problems which were encountered by the based on the findings. Each point in the summary is discussed in the discussion section following the summary.

This chapter also offers general conclusions which can be drawn from this study. The conclusions are then followed by an explanation of some limitations of this study. The discussion of the limitations also leads to calls for improvement in future research.

The remainder of this chapter presents recommendations for those who are interested in this study. Some recommendations are directed to educators, administrators, and information system designers in tertiary education, especially in Indonesia, to serve as a design framework for them in designing an information system for each user group. Some recommendations are also directed to researchers who are interested in exploring the field of information studies

and distance education further, based on the shifting
paradigm of the field and the method for tapping information
seeking and use behaviors of information users.
Furthermore, some considerations for future research are
also included in these recommendations.

Summary of Findings

This study was intended to tap the information seeking
and use behaviors of resident and non-resident university
students. Basically, the study was a survey research study.
The shifting paradigm in the field of information studies
from system/content-oriented to user-oriented has served as
the rationale for employing the Sense-Making approach as the
research approach, and the Story Board Micro-moment Time
Line interview as the data collection method for this study.

The three major questions guiding this study were:

1. What are the information seeking and use behaviors
   of the resident university students?
2. What are the information seeking and use behaviors
   of the non-resident university students?
3. What are the differences and similarities between
   the information seeking and use behaviors of the
   resident and non-resident university students?

Within each question, there were twelve variables being
investigated: (1) the range of students' questions

(description of questions; nature of questions, and entity focus of questions); (2) the expected and actual uses of answers to their questions; (3) the strategies employed to obtain answers to their questions; (4) the sources used for obtaining answers; (5) the reasons for not actively trying to obtain answers to their questions; (6) whether or not the questions were answered; (7) the time of obtaining answers; (8) the degree of being active; (9) the effort expended to obtain answers, (10) the perceived importance of obtaining answers to questions, (11) the perceived completeness of answers and (12) the perceived helpfulness of the answers to questions once those answers were obtained. In addition, an analysis of the problems encountered when the students' questions remained unanswered was also undertaken (failure analysis).

The data were gathered from 69 resident university students and 76 non-resident university students in Jakarta and Ujung Pandang, Indonesia. The results of the data collection were presented in terms of 1,072 questions or the unit of analysis for this study. The data were then analyzed using content analysis and descriptive statistical analysis.

The findings indicate that there are similarities and differences in the information seeking and use behaviors of resident and non-resident university students facing academic and bureaucratic situations, in terms of the twelve

variables investigated in this study and also the failure analysis. The analysis of the twelve variables within each major issue, and the failure analysis described in the preceding chapter are summarized into two tables: Summary Table 1 for general findings, and Summary Table 2 for failure analysis.

General Findings

Summary Table 1 illustrates the similarities and differences between resident and non-resident students in academic and bureaucratic situations based on the twelve variables investigated in this study. The numbers shown in Summary Table 1 indicate the rank order of a particular category and its corresponding percentage, except for the last part of Summary Table 1 where the numbers shown indicate the average or mean of a particular variable. The numbers in parentheses indicate the total number against which the percentage should be read.

The major points of findings presented in the Summary Table 1 include only those points of the first up to the fifth rank. Mostly, they are represented by more than 7% within the data set. Some exceptional cases occur in which the sixth ranked category is also included and its percentage is less than 7%. These cases are intended to create a clearer picture of a particular category perceived by two different student groups in different situations.

All students' questions are considered of equal
importance as elements of the whole system. Each question
represents an element of the total system, which cannot be
ignored or devalued without any cost to the total system.

Although it is found that there is some topical overlap
between academic and bureaucratic situations as perceived by
the resident and non-resident students, the situations are
presented separately in Summary Table 1. Such a condition
is intended to provide the information system designer with
a clear picture of topics which are perceived as academic
problems, and topics which are perceived as bureaucratic
problems by resident and non-resident students.

Summary Table 1 Section 1 presents a summary of Table 2
in Chapter 4. This section illustrates the description of
questions of resident and non-resident students in academic
and bureaucratic situations. The rank and its corresponding
percentage provide a picture of similarities and differences
in terms of questions description of both student groups.
In this section, however, the category of Self-Ability and
Self-Evaluation is combined into a single category of Self-
(ability + evaluation). Accordingly, the percentage of each
category is also combined.

Summary Table 1 Section 2 presents a summary of Table 3
in Chapter 4. This section demonstrates the nature of
questions of resident and non-resident students in academic
and bureaucratic situations. The ranks and the

corresponding percentage presented in this section provide
an illustration of similarities and differences of nature of
resident and non-resident students' questions in different
situations.

Summary Table 1 Section 3 is similar to Table 4 in
Chapter 4. However, instead of presenting the n as in Table
4, Summary Table 1 Section 3 presents the rank order of the
entity focus of resident and non-resident students questions
in academic as well as bureaucratic situations.

Summary Table 1 Section 4 summarizes Table 5 in Chapter
4. This section illustrates the expected and actual uses of
answers as reported by resident and non-resident students in
academic and bureaucratic situations. The ranks and the
corresponding percentage presented in this section provide
an illustration of similarities and differences of expected
and actual uses of answers to resident and non-resident
students' questions in different situations.

Summary Table 1 Section 5 and 6 present a summary of
Table 6 in Chapter 4. Section 5 summarizes the successful
strategies employed by resident and non-resident students in
trying to find answers to their questions in academic and
bureaucratic situations. Section 6 present a summary of the
unsuccessful strategies reported by resident and non-
resident students when they tried to find answers to their
questions in both academic and bureaucratic situations.

Summary Table 1 Section 7 provides a summary of Table 7

in Chapter 4. This section illustrates the rank order of sources used by resident and non-resident students in trying to find answers to their questions in academic as well as bureaucratic situations.

Summary Table 1 Section 8 is a summary of Table 8 in Chapter 4. This section demonstrates the rank order of reasons reported by resident and non-resident students when they did not try actively to find answers to their questions in academic and bureaucratic situations.

Summary Table 1 Section 9 is similar to Table 9 in Chapter 4, which illustrates the average number questions answered, the time of getting answers, the degree the students being active in trying to find answers, the perceived effort expended for getting answers, the perceived importance in getting answers, the perceived completeness and helpfulness of answers once obtained. The above mentioned variables are presented in this section to illustrate both resident and non-resident students' perceptions in academic and bureaucratic situations.

Each major point of the findings, which are presented in each section of Summary Table 1, will be elaborated in the discussion section.

SUMMARY TABLE 1: Comparison of Question Descriptions, Nature of Questions, Focus of Questions, Helps/Uses of answers, Strategies, Sources, Reasons for not being active, and average (mean) number of answered questions, time, being active, effort expended, perceived importance, perceived completeness and helpfulness of answers once obtained.

| | CATEGORIES | ACADEMIC | | | | BUREAUCRATIC | | | |
| | | Res. | | Non-Res. | | Res. | | Non-Res. | |
		Rank	%	Rank	%	Rank	%	Rank	%
SECTION 1	QUESTION DESCRIPTION								
	- Self-(ability + evaluation)	1	25.3	1	21.0	4	8.4	4	8.7
	- Course Content	4	10.7	3	19.1	6	6.8	-	-
	- Academic Regulation and Procedures	-	-	-	-	3	10.0	6	6.3
	- Academic Support	2	18.9	2	20.2	-	-	3	8.1
	- Registration	-	-	-	-	2	15.9	1	28.2
	- Logistics	-	-	-	-	-	-	2	14.4
	- Strategy	6	9.3	4	8.6	-	-	-	-
	- Academic Personnel	5	9.6	-	-	1	20.2	-	-
	- Friends	3	12.6	5	8.2	5	7.9	5	7.7
	(TOTAL n)	(269)		(267)		(252)		(284)	
SECTION 2	NATURE OF QUESTIONS								
	- WHY	3	11.9	-	-	-	-	3	11.6
	- HOW	2	17.5	2	20.6	2	17.5	2	16.9
	- WHO	-	-	-	-	3	10.7	-	-
	- WHAT	1	53.5	1	55.1	1	51.6	1	52.5
	(TOTAL n)	(269)		(267)		(252)		(284)	
SECTION 3	FOCUS OF QUESTIONS								
	- SELF	2	20.8	2	19.9	3	9.9	3	11.6
	- OTHER PERSONS	3	16.4	4	9.4	2	17.1	4	7.0
	- OBJECT	4	12.6	3	13.9	4	7.5	2	12.0
	- SITUATION	1	50.2	1	56.9	1	65.5	1	69.4
	(TOTAL n)	(269)		(267)		(252)		(284)	
SECTION 4	HELPS/USES								
	- Got understanding, ideas, pictures	1	26.6	1	23.8	1	20.6	1	21.2
	- Able to plan	4	8.6	3	10.2	2	19.3	3	14.9
	- Got started and motivated	3	9.5	4	8.6	-	-	5	7.2
	- Kept going	2	15.0	2	22.6	3	14.8	2	16.0
	- Got support, confirmation and reassurance	5	7.7	-	-	4	8.3	4	9.8
	(TOTAL n)	(440)		(420)		(384)		(430)	

SUMMARY TABLE 1 (continued)

| | CATEGORIES | ACADEMIC | | | | BUREAUCRATIC | | | |
| | | Res. | | Non-Res. | | Res. | | Non-Res. | |
		Rank	%	Rank	%	Rank	%	Rank	%
	SUCCESSFUL STRATEGY								
SECTION 5	- Asking somebody - authority	3	10.8	4	7.2	1	27.6	1	32.1
	- Asking oneself and thinking	2	11.1	3	8.2	3	5.9	-	-
	- Asking something	-	-	-	-	-	-	3	5.6
	- Reading and studying	-	-	2	10.0	-	-	-	-
	- Asking friends and significant others	1	29.8	1	22.2	2	27.2	2	10.9
	UNSUCCESSFUL STRATEGY								
SECTION 6	- Asking somebody - authority	-	-	-	-	1	12.1	1	13.2
	- Reading and studying	-	-	2	7.5	-	-	-	-
	- Asking friends and significant others	1	11.7	1	15.8	2	9.6	2	12.4
	(TOTAL n)	(315)		(279)		(272)		(265)	
	SOURCES								
SECTION 7	- Institutional Offices and officers	-	-	-	-	3	19.2	1	38.4
	- Academic personnel	3	8.2	-	-	4	15.6	-	-
	- Books and other materials or publications	3	8.2	3	9.0	-	-	-	-
	- Self	1	46.2	1	36.6	2	26.8	3	20.5
	- Friends and significant others	2	28.9	2	33.0	1	29.9	2	24.6
	(TOTAL n)	(294)		(224)		(224)		(224)	
	REASONS FOR NOT BEING ACTIVE								
SECTION 8	- Time	-	-	1	21.3	-	-	3	11.8
	- Barrier of possibility	4	8.7	2	16.0	4	8.0	-	-
	- No other ways	4	8.7	3	12.0	4	8.0	-	-
	- Self-understanding	1	28.3	4	9.3	1	26.0	3	11.8
	- Doesn't matter	2	13.0	-	-	2	12.0	-	-
	- Just wait and do nothing	-	-	-	-	2	12.0	3	11.8
	- Rhetorical Question	3	10.9	-	-	-	-	2	13.2
	- Have got other alternatives	-	-	-	-	3	10.0	1	15.8
	(TOTAL n)	(46)		(75)		(50)		(76)	

182

SUMMARY TABLE 1 (continued)

SECTION 9	VARIABLES*	mean	mean	mean	mean
	– Answered?	.89	.74	.76	.71
	– Time of answer	.28	.28	.22	.29
	– Being Active	.83	.80	.80	.73
	– Effort	4.48	4.27	4.50	4.33
	– Importance	4.74	5.00	4.97	5.21
	– Completeness of answer	.58	.74	.61	.64
	– Helpfulness of answer	1.59	1.65	1.66	1.50

* ANSWERED? : 0=No, 1=Yes

TIME OF ANSWER : 0=Now, 1=Later, 2=After the problem is over

BEING ACTIVE : 0=No, 1=Yes

EFFORT : Scale of 0-6, 0=no effort at all, 6=the highest effort possible

IMPORTANCE : Scale of 0-6, 0=not important at all, 6=the most important

COMPLETENESS OF ANSWER : 0=partial, 1=complete

HELPFULNESS OF ANSWER : 0=not helpful, 1=helpful but not as expected,
2=helpful as expected

183

Failure Analysis

The result of failure analysis is summarized in Summary Table 2. Summary Table 2 is intended to present some of the predominant findings which describe the phenomena of the unanswered questions as an essential part of the information seeking and use behaviors of resident and non-resident university students investigated in this study. The failure analysis, presented in Chapter 4, was perceived as a means for elaborating, explaining, and gaining insight into the patterns that emerge between resident and non-resident students when their questions remained unanswered in academic and bureaucratic situations. As a matter of fact, the findings of this study show that about 22.5% of the total resident and non-resident students' questions remained unanswered (17.3% of resident students' questions and 27.4% of non-resident students' question).

In the failure analysis, an "unanswered question" was used as the failure indicator. Similar to the previous analysis, the unanswered questions were also analyzed based on the twelve variables investigated in this study. The numbers shown in Summary Table 2, for the most part, indicate the rank order of a particular category and its corresponding percentage, except for the last part of Summary Table 2 where the numbers shown indicate the average or mean of a particular variable. The numbers shown in parentheses indicate the total number against which the

percentage should be read.

The findings of the failure analysis, presented in the Summary Table 2, include only the major points of the first up to the fifth rank. Mostly, they are represented by more than 7% within the data set. Some exceptional cases occur in which the sixth ranked category is also included and its percentage is less than 7%. These cases are intended to present a picture of a particular category as perceived by the two different student groups in different situations when their questions remained unanswered.

Summary Table 2 Section 1 presents a summary of Table 10 in Chapter 4. This section illustrates the description of unanswered questions of resident and non-resident students in academic and bureaucratic situations. The rank and its corresponding percentage provide an illustration of similarities and differences in terms of description of resident and non-resident students' questions which remained unanswered. In this section, however, the category of Self-Ability and Self-Evaluation is combined into a single category of Self-(ability + evaluation). Accordingly, the percentage of each category is also combined.

Summary Table 2 Section 2 presents a summary of Table 11 in Chapter 4. This section demonstrates the nature of unanswered questions of resident and non-resident students in academic and bureaucratic situations. The ranks and the corresponding percentage presented in this section provide

an illustration of similarities and differences of nature of
resident and non-resident students' questions which remained
unanswered in different situations.

Summary Table 2 Section 3 is similar to Table 12 in
Chapter 4. However, instead of presenting the n as in Table
12, Summary Table 2 Section 3 presents the rank order of the
entity focus of resident and non-resident students questions
which remained unanswered in academic as well as
bureaucratic situations.

Summary Table 2 Section 4 summarizes Table 13 in
Chapter 4. This section illustrates the expected uses of
answers to the unanswered questions as reported by resident
and non-resident students in academic and bureaucratic
situations. The ranks and the corresponding percentage
presented in this section provide an illustration of
similarities and differences of expected uses of answers to
resident and non-resident students' questions in different
situations which remained unanswered.

Summary Table 2 Section 5 presents a summary of Table
14 in Chapter 4. Section 5 illustrates the unsuccessful
strategies reported by resident and non-resident students
when they tried to find answers to their unanswered
questions in both academic and bureaucratic situations.

Summary Table 2 Section 6 is a summary of Table 15 in
Chapter 4. This section demonstrates the rank order of
reasons reported by resident and non-resident students when

they did not try actively to find answers to their
unanswered questions in academic and bureaucratic
situations.

Summary Table 2 Section 7 is similar to Table 16 in
Chapter 4, which illustrates the degree the students being
active in trying to find answers, the perceived effort
expended for getting answers, and the perceived importance
in getting answers. The above mentioned variables are
presented in this section to illustrate resident and non-
resident students' perceptions in academic and bureaucratic
situations when their questions remained unanswered.
Each major point of the findings, which are presented in
each section of Summary Table 2, will be elaborated in the
discussion section.
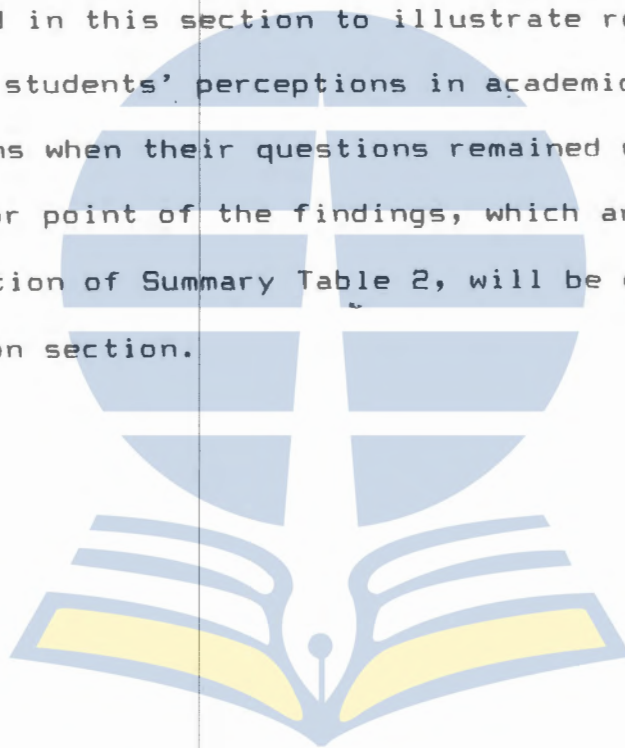
SUMMARY TABLE 2: UNANSWERED QUESTIONS — Comparison of Question Description,
Nature of Questions, Focus of Question, Helps/Uses of answers,
Strategies, Reasons for not active, and average (mean) of
being active, effort expended. importance in getting answers.

| | | ACADEMIC | | | | BUREAUCRATIC | | | |
| | | Res. | | Non-Res. | | Res. | | Non-Res. | |
	CATEGORIES	Rank	%	Rank	%	Rank	%	Rank	%
SECTION 1	QUESTION DESCRIPTION								
	- Self-(ability + evaluation)	1	33.3	2	20.0	2	11.7	4	9.9
	- Grade	-	-	-	-	2	11.7	5	8.6
	- Course Content	-	-	1	25.7	-	-	-	-
	- Academic Support	-	-	4	11.4	-	-	3	11.1
	- Registration	-	-	-	-	3	10.0	1	16.0
	- Logistics	-	-	-	-	-	-	2	14.8
	- Strategy	2	23.3	3	12.9	-	-	4	9.9
	- Academic Personnel	3	10.0	-	-	1	21.7	-	-
	- Friends	3	10.0	-	-	-	-	-	-
	(TOTAL n)	(30)		(70)		(60)		(81)	
SECTION 2	NATURE OF QUESTIONS								
	- WHY	3	16.7	3	14.3	2	13.3	3	13.6
	- HOW	2	20.0	2	25.7	-	-	2	21.0
	- WHAT	1	56.7	1	47.1	1	55.0	1	50.6
	(TOTAL n)	(30)		(70)		(60)		(81)	
SECTION 3	FOCUS OF QUESTIONS								
	- SELF	2	26.7	2	25.7	3	6.7	2	13.6
	- OTHER PERSONS	3	20.0	-	-	2	18.3	-	-
	- OBJECT	-	-	3	10.0	-	-	3	9.9
	- SITUATION	1	50.0	1	61.4	1	70.0	1	71.6
	(TOTAL n)	(30)		(70)		(60)		(81)	
SECTION 4	HELPS/USES								
	- Got understanding, ideas, pictures	1	30.3	2	17.3	1	23.4	2	19.4
	- Able to plan	-	-	-	-	1	23.4	1	20.4
	- Got started and motivated	2	12.1	-	-	-	-	-	-
	- Kept going	2	12.1	1	22.2	-	-	3	12.9
	- Got support, confirmation and reassurance	-	-	3	1..	-	-	-	-
	(TOTAL n)	(33)		(81)		(64)		(93)	

188

SUMMARY TABLE 2 (continued)

	CATEGORIES	ACADEMIC				BUREAUCRATIC			
		Res.		Non-Res.		Res.		Non-Res.	
		Rank	%	Rank	%	Rank	%	Rank	%
SECTION 5	UNSUCCESSFUL STRATEGY								
	– Asking somebody – authority	2	10.0	3	15.1	1	54.0	1	31.0
	– Asking oneself and thinking	–	–	–	–	2	18.9	3	17.2
	– Reading and studying	–	–	2	24.2	–	–	–	–
	– Asking friends and significant others	1	55.6	1	33.3	2	18.9	2	24.1
	(TOTAL n)	(18)		(33)		(37)		(58)	
SECTION 6	REASONS FOR NOT BEING ACTIVE								
	– Time	–	–	1	21.9	–	–	–	–
	– Barrier of possibility	1	29.0	1	21.9	2	13.0	–	–
	– No other ways	2	15.4	–	–	–	–	–	–
	– Self-understanding	–	–	3	12.2	–	–	–	–
	– Doesn't matter	2	15.4	–	–	1	21.7	–	–
	– Just wait and do nothing	–	–	–	–	2	13.0	1	25.9
	– Rhetorical Question	–	–	–	–	–	–	2	14.8
	– Have got other alternatives	–	–	–	–	–	–	2	14.8
	(TOTAL n)	(13)		(41)		(23)		(27)	
SECTION 7	VARIABLES*	mean		mean		mean		mean	
	– Being Active	.57		.41		.58		.67	
	– Effort	3.35		4.07		4.23		4.04	
	– Importance	3.70		4.54		4.45		5.04	

BEING ACTIVE : 0=No, 1=Yes

EFFORT : Scale of 0-6, 0=no effort at all, 6=the highest effort possible

IMPORTANCE : Scale of 0-6, 0=not important at all, 6=the most important

189

This section summarized the major findings of this study: the differences, the similarities, and the failure analysis of information seeking and use behaviors of resident and non-resident university students and presented them in two summary tables. The following discussion will discuss each major finding in more detail, offer probable explanations of the findings, and give suggestions for action based on the findings.

Discussion

This section discusses the findings of the study in a more detailed manner by including some possible explanations for each finding. Furthermore, relationships between and among findings and the relationship of findings to the literature in the field are also discussed.

This discussion section is organized in two general divisions: general findings about the twelve variables investigated in this study under the three main issues, and a discussion of the failure analysis.

General Findings

In general, the findings show that there are similarities and differences between the information seeking and use behaviors of resident and non-resident students. The similarities indicate that there is a generalizable pattern of information seeking and use behavior, regardless

of whether the users are resident or non-resident students. This result is supported by Dervin and Nilan (1986) who claim that the notion of information needs is an intersubjective concept which allows the identification of generalizable patterns of information seeking and use behaviors across time and space from the user's perspective.

The differences that appear between the information seeking and use behavior of resident and non-resident students illustrate situational differences of being either resident or non-resident university students. These differences also indicate that each individual student comes across his/her own unique and subjective experience as s/he is moving across time and space (Dervin, 1983; Wilson and Streatfield, 1981). Thus, information needs should always be defined at the individual level with attention paid to the specific time and space as experienced by individual users.

The similarities and differences between the information seeking and use behaviors of resident and non-resident students facing academic and bureaucratic situations are described in the following sections.

1. Range of questions of resident and non-resident university students

Question Descriptions

The range of questions represent the range of gaps, or the range of problematic situations in which the individual is trying to make sense out of something. This range of questions illustrates the opportunity for information to help the individual to continue on her/his way or to move through an ever-changing time and space.

Both resident and non-resident students (see Summary Table 1, section 1, column 1 and 2) reported concern with self-ability, especially their academic ability and their own self-evaluation in academic situations. Questions such as "Will I be able to finish my program on time?," "Will I be able to do that?," "What was wrong with me that I could not pass the exams?," "Do I have to drop out?," are only a few examples representing the students' concern with their academic ability and their own self- evaluation. This concern may indicate that students in both groups lack self-confidence, self-esteem, and self- assurance⁴, which are viewed as barriers to adult learning processes (Knox, 1977). When students lack self-confidence all along, they may

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⁴ Self-confidence, self-esteem, and self-assurance in this study are freely translated as an attitude which indicates the extent to which the individual believes her/himself to be capable, significant, successful and worthy.

become frustrated and depressed, which could further hinder their success in completing their studies. This condition has been explained by Bandura (in Bell-Gredler, 1986) as the condition of individual students lacking "self-efficacy" or sense of mastery, which may influence the quality of the students' individual performance and the persistence of the individual students in difficult tasks. However, when this finding is related to the other two findings, about academic support and course content, and another finding about the students' concern with strategy, then the issue becomes whether or not the concern about self-academic-ability and self-evaluation results from lack of motivational support or lack of study skills (thus, students do not know how to study correctly and they do not have confidence that they can do it when they do not know how to do it), or a combination of both?

One possible explanation of this condition of students lacking self-confidence, self-esteem, self-reassurance, as related to other findings about academic support, course content, and information seeking strategy, is that it may be caused by the cultural value system in Indonesia. In an Indonesian family, a child is raised to be dependent upon her/his parents, or her/his older sisters/ brothers. At school, a child perceives the teacher as the giver and provider of information, whom a child can depend on (Beeby, 1979). Thus, a young Indonesian person is rarely taught to

be self-confident and have self-esteem and self-assurance. Being self-confident and having self-esteem and self-assurance is usually translated as being arrogant or being proud of oneself. Furthermore, the "leaving home" phase (Merriam, 1984) for Indonesian youth usually occurs when one gets married; otherwise, s/he will always be "at home" with her/his parents. Koentjaraningrat (1971) claims that such a characteristic is impeding the national development in general, since young Indonesians tend to be conformists and wait to be spoonfed (by older or higher-up persons), and do not have the courage to undertake any adventures, answer any challenges, be responsible, and be themselves.

In line with Koentjaraningrat's claim, another explanation of students lacking self-confidence, self-esteem, self-reassurance, as related to other findings about academic support, course content, and information seeking strategy, is that, in general, the Indonesian university student is not trusted to study on his or her own, and even less to educate himself in intellectual discussion with fellow students (Keyfitz, 1988). Thus, s/he is never taught to be proactive in acting and reacting since it will be considered impolite and create new problems for the academic personnel (teachers, lecturers, professors, tutors, etc.) (Beeby, 1979).

The second major concern reported by both resident and non-resident students in academic situations (Summary Table

1, section 1, column 1 and 2) was about academic support, including textbooks, references, instructional materials, other reading materials, and translated versions of reading materials. To a certain extent this shows the eagerness and the curiosity of both groups of students to study and to know more about what has been presented in the classroom by the instructors or what has been presented through the modular instructional materials. It also indicates that there has not been enough academic support available to either resident and non-resident students. This has been a general condition across many developing countries where supplementary reading materials are scarce, many references are available only in foreign languages, and there is a low level library service (Beeby, 1979; Fernig, 1980).

When this finding about academic support is related to another finding, which shows the course content as the major concern reported by both student groups, then it can be assumed that there might be something wrong with the course content so that students were trying to find academic support to help them in solving their problems.

As a matter of fact, in academic situations, non-resident students reported more concern with course content than resident students. This finding and also one of the findings of an earlier study by Motik (1989) about modular instructional materials may indicate a problem in the course content that is delivered through the modular instructional

materials, perhaps a problem in the nature of the subject matter area, or a problem in the design of the instructional materials. When there is a problem with the course content that is delivered through printed modular instructional materials, which is the primary means of instruction in distance education, then the learning process may be hampered. This condition also raises the issue of whether or not the problem is within the instructional materials (such as typing errors, organization of presentation, missing words/sentences/paragraphs, misplacement of instruction, design of instruction, etc.) or within the students themselves, or a combination of the two? Pringgoadisuryo (1988) claims that Indonesian students do not possess good reading habits since they are culturally trained to direct oral presentation (face-to-face meeting). Thus, the task of reading instructional materials independently may seem to be burdensome for those who do not have good reading habits. If, the instructional materials also present problems in terms of typing errors, organization of presentation, missing words/sentences/ paragraphs, misplacement of instruction, design of instruction, etc., then the reading process may become more burdensome for those students.

Both student groups also asked questions about their friends (Summary Table 1, section 1). Some examples of the students' questions representing this concern were: "Would

my friend be able/willing to help me?", "Did my friend have
the same problem as I?", "Will my friend let me borrow his
books?" Thus, the students' concern about their friends was
in reference to their friends being their helpers and
facilitators in solving academic problems. This concern may
indicate the interdependence between and among students in
both resident and non-resident universities. Such a finding
can argue for the development of study groups which have
been claimed to be an effective learning strategy for
resident students (Johnson, 1980) as well as for non-
resident students (Kartasurya, 1990).

A distinguishing set of questions reported by resident
students in academic and bureaucratic situations (Summary
Table 1, section 1) were about academic personnel, including
instructors, professors, academic advisors, tutors, and
teaching assistants. Their concern with academic personnel
included several aspects, such as the personality and
behavior of academic personnel, office hours and appointment
times, and the function and roles of academic personnel.
This concern may indicate a problem with academic personnel
in terms of their personality, behavior, time allocation for
students, and function and roles. The first two concerns
may indicate the personal preference of students toward
academic personnel. However, the problems of time, function
and role may be caused by the fact that most academic
personnel in Indonesia usually hold more than one teaching

job in more than one university (usually due to economic reasons) (Beeby, 1979; Keyfitz, 1988). Such activities are certainly time-consuming, and inhibit academic personnel from allocating their time for students, and playing their roles properly for students in the way they are expected to. Non-resident students, however, did not report concern with their academic personnel, since they obviously did not have regular academic personnel other than tutors (who are very limited in number and accessibility).

The majority of questions asked by both resident and non-resident students in bureaucratic situations were about registration (Summary Table 1, section 1, column 3 and 4). A closer look into this concern reveals that resident students were concerned with registration in terms of the course selection sheet (KRS), course/exam schedule, and credit limits for registration. Regarding the course selection sheet (KRS), resident students reported that they were concerned mainly with the procedures for getting the course selection sheet completed for their registration. It involved several bureaucratic steps which sometimes were time-consuming and could be frustrating, especially when the gatekeepers (including deans, department chairman, academic advisors, and some administrative personnel) were not accessible when needed. Regarding the course/exam schedule, resident students reported that they often were caught between courses and exams due to conflicting schedules.

Regarding the credit limits for registration, resident students reported that they wanted to be able to finish the program as soon as possible; therefore, they needed to take as many credits as possible per semester. However, the strategy does not work, because there are restrictions on the number of credits that a student can take based on her/his Grade Point Average for the preceding semester.

Non-resident students were also reported concern with registration (Summary Table 1, section 1, column 4), especially in terms of the general procedures, registration for examinations and re-examinations, and the course/exam schedule. Regarding the general procedure of registration, non-resident students reported that many times they did not know how to fill in the computerized registration form, that they did not know the deadline for registration, and that they did not know what the requirements were for registration. Regarding the registration for examinations and re-examinations, non-resident students reported that they were confused by the always-changing-deadlines, and they did not know the requirements for examinations and re-examinations. Regarding the course/exam schedule, non-resident students reported that they were frequently caught between (and sometimes among) exams due to conflicts in the schedule.

The concern of non-resident students with registration may relate partly to their reported concerns with logistics

(Summary Table 1, section 1, column 4), especially when the registration forms were not available from their regional offices and local post offices at the time of need. Furthermore, non-resident students reported concerns with logistics, which include the availability of modular instructional materials, individual assignments and other forms in their regional offices and local post offices. In some cases, students reported that their registration and their learning process were hindered (delayed), because the necessary instructional materials, individual assignments, and other forms were not yet available (perhaps caused by delayed distribution from the central office, and also poor mail service) or were altogether gone from their regional office (may be due to an underestimation for materials allocation for each regional office).

While logistics has been reported to be a major concern of non-resident students in bureaucratic situations, it is not a concern reported by resident students.

Non-resident students reported concerns with academic support in bureaucratic situations, as well as in academic situations (Summary Table 1, section 1, column 2 and 4). The system may appear too complex for them to understand, and they feel uncertain about whom they should approach with requests for further information and advice to enable them to make decisions. The fact that non-resident students located in dispersed and remote areas (not always in a big

city) which may hinder their access to libraries,
bookstores, and even to their friends in the study group,
and that they do not have a central campus which offers them
a variety of student support services, their concern with
academic support is understandable (Feasley, 1983; Fischer
in Crocker, 1982; Robinson, 1981). As mentioned earlier,
even the resident students who have a central campus which
offers a variety of student support services still reported
concerns with their support services, especially in academic
situations.

In bureaucratic situations, both resident and non-
resident students reported that they were also concerned
with academic regulations and procedures (Summary Table 1,
section 1, column 3 and 4). The concern of resident
students with academic regulations and procedures may be
related to their concerns about the credit limit for
registration, mainly, that they wanted to take as many
credits as possible per semester. Such a strategy is
impossible because some courses were developed in sequence,
and once again, their load per semester was limited based on
their own GPA. The concern of non-resident students with
academic regulations and procedures may be related to their
lack of self-confidence and self-academic-ability; whether
or not they will be able to complete their study within the
given/preset regulations and procedures from the non-
resident university.

In bureaucratic situations, both student groups also reported concerns with their self-ability and self-evaluation (Summary Table 1, section 1, column 3 and 4), which to some extent may indicate their lack of self-confidence, self-esteem, and self-assurance in dealing with their bureaucratic problems.

Finally, both resident and non-resident students facing bureaucratic situations reported concerns with their friends (Summary Table 1, section 1). One major aspect of this relationship which was reported was whether or not their friends know the how-to procedures, understand regulations, and know the time and place of any events. This concern may once again indicate the interdependence between and among students in bureaucratic problem-solving situations. This concern may also show the problems of isolation, especially for non-resident students, who do not have information sources nearby, and who need somebody to help them solve their bureaucratic problems.

Nature of Questions (5W)

Looking at another angle of the range of questions asked by resident and non-resident students, it was found that in academic situations, the majority questions reported by both resident and non-resident students were about WHAT or the identification of situational conditions of gaps that they were facing in academic situations, and about HOW or

the identification of means or procedures for moving from one point in time-space to another and for bridging the gaps that they were facing in academic situations (Summary Table 1, section 2, column 1 and 2). This condition also applies to resident and non-resident students in their bureaucratic situations (Summary Table 1, section 2, column 3 and 4), where the majority questions asked were 'also about WHAT and HOW. This finding may show that both resident and non-resident students in academic, as well as bureaucratic situations, did not really understand or get the picture of the existing situational conditions of their problematic situations in their learning process. Also, that both student groups, in both situations, may lack the procedural skills to deal with their problems in the learning process.

Focus of Questions

Another perspective on the range of questions indicates that in their attempts to bridge the gap they were facing at one point in time in academic and bureaucratic situations, resident and non-resident students focused the majority of their questions on SITUATION (Summary Table 1, section 3).

In academic situations, resident and non-resident students' questions were focused on SELF (Summary Table 1, section 3, column 1 and 2), which supports the finding that a relatively high number of resident and non-resident students' questions in academic situations were about self,

especially self-academic ability and self- evaluation. As mentioned earlier, this finding may suggest that resident and non-resident students lack self-confidence, self-esteem, and self-assurance.

A further look into the focus of the resident students' questions in academic and bureaucratic situations indicates that a relatively large number of their questions of were also focused on OTHER PERSONS (Summary Table 1, section 3). This finding supports the first findings about the description of resident students' questions which show a relatively high level of concern about academic personnel and friends, both in academic and bureaucratic situations.

A relatively high number of non-resident students' questions were focused on OBJECT, in academic as well as bureaucratic situations (Summary Table 1, section 3). This finding may be related to the fact that a relatively high number of non-resident students' questions were about logistics (especially instructional materials, individual assignments, and other forms) and academic support (especially references and additional reading materials).

2. Expected and actual uses of answers

The findings for expected and actual uses of answers between resident and non-resident students in academic and bureaucratic situations are presented in Summary Table 1, section 4. Both resident and non-resident students reported

that the predominant expected and actual uses of answers to
their questions, in academic as well as bureaucratic
situations, was to gain understanding, and ideas and
pictures about the gap that they were facing at one point in
time in their movement through time-space contexts. Thus,
students needed answers to their questions in order to gain
understanding, and ideas and pictures of what their
situations were in academic and bureaucratic situations.
Furthermore, this finding may also indicate that both
student groups were lacking understanding, and ideas and
pictures of what was happening as they were moving through
time-space contexts in their learning process. Such a
condition may explain the earlier findings that both
resident and non-resident students were also concerned about
their own academic ability and self evaluation, and that
they might be lacking self-confidence, self-esteem and self-
assurance. Both groups also reported a relatively high
frequency of the expected and actual uses of their answers
for getting support, confirmation and reassurance.

In academic as well as bureaucratic situations (Summary
Table 1, section 4), both resident and non-resident students
reported that they also needed answers to be able to plan,
to prepare and make decisions ahead of time about their
movement through time and space. Once they knew the
procedures, they reported that they also expected to be able
to keep on moving across time-space contexts in their

learning process.

In academic situations (Summary Table 1, section 4, column 1 and 2), both student groups also reported that they expected and actually used answers to their questions to get started and motivated. This condition may also indicate that both student groups were lacking self-confidence, self-esteem, self-assurance, and motivation[=]. Furthermore, in bureaucratic situations (Summary Table 1, section 4, column 3 and 4), both student groups reported that they expected and actually used answers to their questions to get pleasure and to feel emotional relief, joy, and satisfaction.

No predominant differences were found in the pattern of expected and actual uses of answers reported by resident and non-resident university students in academic and bureaucratic situations. However, there are some findings which indicate that both resident and non-resident students have some degree of future orientation, i.e., the expected and actual uses of answers by students for being able to plan, for getting started and motivated, and for keeping on going. These findings certainly do not support the claim that Indonesians, in general, lack a future orientation due to their poor economic condition (Koentjaraningrat, 1971). These findings may indicate that there are some changes

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[=] Motivation in this study is freely translated as different amounts of effort or persistence shown by different people on the same task; in the word of Keller (1983), "what a person will do."

happening which confirm that Indonesian students are
exhibiting future orientations.

3. Perceived successful and unsuccessful strategies

The results of the analysis showed that resident and
non-resident students facing academic and bureaucratic
situations reported some similar and some different
perceived successful and unsuccessful strategies (Summary
Table 1, section 5 and 6).

In academic situations, asking friends and significant
others was reported frequently as a successful strategy by
both resident and non-resident students who were actively
trying to find answers to their questions (Summary Table 1,
section 5, column 1 and 2). As in many other communication
and networking studies, this finding may indicate that
contacting informal sources, such as friends and significant
others, seems to be the common and preferred way to look for
information by many information seekers (including students
as information seekers) over formal information sources.
This finding may also suggest, as does the earlier finding
about the concern of both student groups about friends, that
there may be a certain degree of interdependence among
students and reliance on friends. Such interdependence and
reliance on friends shows that Indonesian students highly
value cooperation among friends as claimed by
Koentjaraningrat (1971).

Resident students facing academic situations (Summary Table 1, section 5, column 1) also reported that they perceived some other successful strategies, including asking oneself and thinking, asking somebody with authority, asking something, and reading and studying. Other strategies, except asking somebody with authority, indicate individual efforts of studying and learning which are generally expected from students in academic situations. Some academic problems lend themselves only to individual learning, and not to cooperative efforts, such as solving exam problems. Asking somebody with authority, which involves asking academic personnel such as instructors, academic advisors, and teaching assistants, is an understandable strategy chosen by resident students, who have access to those personnel on campus.

Non-resident students facing academic situations (Summary Table 1, section 5, column 2) also reported other strategies perceived as successful, including: reading and studying, asking oneself and thinking, and asking somebody with authority. The first two perceived successful strategies may indicate individual effort to study and learn, which is expected of non-resident students, not only in academic situations, but also in bureaucratic situations, since non-resident students are considered to be independent learners. The last perceived successful strategy, asking somebody with authority, may show the creativity of non-

resident students in getting access to somebody with authority for their academic problems (i.e., academic personnel), although such personnel would be limited to either the tutor provided by the non-resident university or an instructor from neighboring universities/colleges.

In academic situations, resident and non-resident students reported that asking friends and significant others was an unsuccessful strategy to obtain answers to their questions (Summary Table 1, section 6, column 1 and 2). This situation may be due to the fact that their friends and significant others also had the same problems and, thus, could not give any answers to their friends' questions. Furthermore, asking somebody with authority was also reported frequently as an unsuccessful strategy by resident and non-resident students. Relating this finding to the first finding about friends and significant others, one possible explanation is that resident and non-resident students were expected to work independently, and not cooperatively with their friends, significant others, or somebody with authority, in solving their academic problems.

In bureaucratic situations (Summary Table 1, section 5, column 3 and 4), both resident and non-resident students who were active in pursuing answers to questions reported that their perceived successful strategy was asking somebody with authority. This finding may indicate that resident and non-resident students had taken an appropriate strategy to deal

with their bureaucratic problems. It may also indicate the students' reliance on "somebody with authority" (freely translated to be academic and administrative personnel of the educational institutions).

Furthermore, resident students reported more frequently than non-resident students that asking friends and significant others was perceived as a successful strategy in bureaucratic situations (Summary Table 1, section 5, column 3). This finding may, once again, indicate the resident students' reliance on their friends. Non-resident students could not rely on their friends as often as resident students, because non-resident students have limited access to their friends from the same non-resident university. Although non-resident students had wider access to friends from a neighboring university, they could not rely on them, since these friends were not part of the same bureaucratic system as the non-resident students.

The perceived unsuccessful strategies in bureaucratic situations, as reported by resident students, were asking friends and significant others, and asking somebody with authority (Summary Table 1, section 6, column 3). This condition may indicate that the resident students' reliance on their friends sometimes is not fruitful, perhaps, because their friends do not have knowledge about the particular bureaucratic concern. Also, asking somebody with authority may not always be a successful strategy when the answers to

the students' bureaucratic concerns are fixed regulations/ policy or confidential information. Non-resident students in bureaucratic situations reported the same perceived unsuccessful strategies as resident students (Summary Table 1, section 6, column 4). However, the findings indicate that non-resident students reported a lower frequency of the strategy of asking friends and significant others, and a higher frequency of the strategy of asking somebody with authority. This once again is probably due to the limited access of non-resident students to friends, so they revert to somebody with authority.

The overall picture of strategies in academic and bureaucratic situations indicates that resident students reported a higher frequency of successful strategies and a lower frequency of unsuccessful strategies than non-resident students (Summary Table 1, section 5 and 6). This condition, to some extent, may indicate that the resident students' information system is working relatively better than the non-resident students' information system, in that the former system allows a higher frequency of successful strategies and a lower frequency of unsuccessful strategies, while the latter systems do not. Furthermore, the reason for this condition may be the fact that resident students have a variety of services available on their campus, while non-resident students do not have a similar luxury.

4. Sources of answers

The findings show that in academic situations the most frequent sources reported as being used by resident and non-resident students were self, friends and significant others (Summary Table 1, section 7, column 1 and 2). The students' reliance on themselves as a source for their academic problems is expected, since most academic problems lend themselves only to individual learning efforts and not to cooperative efforts. However, when the problems continue, students of both groups reported that they turned to friends and significant others for help, although this strategy was not always successful. This finding may, once again, show the interdependence among students.

Resident students reported that they frequently used academic personnel and institutional publications as sources of answers to their questions in academic situations. This finding suggests that resident students are choosing the correct source of answers to deal with their academic problems. Actually, the correct choice should have been made by a majority of resident students, not only by some of them.

Non-resident students also reported that they frequently used institutional publications, non-institutional offices and officers, and institutional offices and officers as additional sources of answers to their questions in academic situations (Summary Table 1,

section 7, column 2). This finding may indicate that non-resident students used a greater variety of sources than resident students. Such a condition is possibly due to the fact that non-resident students do not have specific sources provided by their institutions for helping them with their problems. Thus, non-resident students used a variety of sources available in their surroundings to help them with their problems. This condition may also indicate the salient needs of non-resident students for help with their academic problems. These needs, when unfulfilled, may hinder individual learning progress.

In bureaucratic situations, the sources reported by resident students were friends and significant others, self, institutional offices and officers, academic personnel, and institutional publications (Summary Table 1, section 7, column 3). The most interesting finding in this case was the fact that friends and significant others were the most frequently reported source used in bureaucratic situations. Unless the friends and significant others had the necessary information in advance, this finding may suggests over-reliance on friends and significant others in bureaucratic situations.

Non-resident students in bureaucratic situations reported that the sources used for getting answers to their questions were institutional offices and officers and institutional publications (Summary Table 1, section 7,

column 4). This finding suggests that non-resident students are using the correct sources, as expected by the non-resident university. Another source reported being used was friends and significant others, which once again indicates students' over-reliance on friends and significant others. Self was also the source used by non-resident students, which indicates an isolation problem of non-resident students who, in most cases, do not have other choices than self to solve the problem.

The high use of non-institutional sources was reported by both resident and non-resident students in academic situations (Summary Table 1, section 7). In bureaucratic situations, both student groups reported a relatively balanced use of institutional and non-institutional sources. The use of non-institutional sources was reported more frequently by resident students, while the use of institutional sources was reported more frequently by non-resident students. This finding illustrates resident and non-resident students' perception of and reliance on institutional and non-institutional sources. It is acknowledged that students' reliance on non-institutional sources may show their creativity in taking advantage of any available sources in their surroundings and their broad network of contacts, but it is also a possible indicator of the need for improving institutional sources of information.

5. Reasons for not being active

Different kinds of reasons for not being active in trying to find answers to questions reported by resident and non-resident students in academic and bureaucratic situations indicate that there are differences which are virtually bound by the situation of their being resident and non-resident students (Summary Table 1, section 8).

The findings indicate that the reasons for not being active, as reported by resident students in academic situations, were that they figured out the answer themselves, their questions did not matter, their questions were rhetorical questions, and they saw no other way and no possibility of their questions being answered (Summary Table 1, section 8, column 1). The first reason is expected in an academic context since some academic problems are intended to be dealt with by the students themselves, through their own creative efforts to gain their own understanding of the problems. The second and third reasons may indicate that resident students were asking questions only for the sake of asking questions, perhaps as expressions of dissatisfaction or complaint. Their last two reasons may show their pessimism toward getting answers to their questions.

Non-resident students who did not actively pursue answers to their questions in academic situations reported their reasons as time constraints, no possibility and no other ways of getting answers, and they figured out the

answer themselves (Summary Table 1, section 8, column 2). A majority of non-resident students are workers who have permanent jobs and/or housewives who have family responsibilities; thus, time constraints due to competing priorities/assignments are understandable. This finding confirms Knox's statement (1977) which pointed out that one barrier to the adult learning process is students' lack of time.

The fact that only some non-resident students reported that they did not actively try to find answers because they figured out the answer for themselves, may indicate that non-resident students have to be more motivated to study independently, and to come up with correct understanding of their own academic problems.

In bureaucratic situations (Summary Table 1, section 8, column 3 and 4), resident students reported that they did not actively try to find answers to their questions because they figured it out themselves; their questions did not matter; and they had obtained other alternatives. They also reported that in many cases they just waited and did nothing. Coming up with their own answers and other alternatives shows the creativity of resident students in trying to understand or find alternatives to their own problems. Their second reason, however, may indicate that they asked questions only for the sake of asking them (perhaps only as expressions of dissatisfaction or

complaint). Their last reason may indicate that they did
not have a choice of doing anything else to find answers to
questions.

Non-resident students reported their reasons for not
being active in bureaucratic situations (Summary Table 1,
section 8, column 4) included: availability of other
alternatives; questions were rhetorical; they had time
constraints; and they came up with their own answers. They
also reported that in many cases they just waited and did
nothing. Similar to the resident students, non-resident
students also showed a high degree of creativity in coming
up with other alternatives and their own understanding of
their bureaucratic problems.

Furthermore, time constraint were once again reported
as a reason by non-resident students who were mostly workers
and/or housewives with competing priorities and assignments.
Also, the fact that non-resident students mentioned their
reasons for not being active were that their questions were
rhetorical, and they just waited and did nothing may
indicate that they have complaints (about the system), or
dissatisfaction or they do not know anything else to do to
find answers to their bureaucratic problems.

Some findings which indicate some possibilities of
students' pessimism about getting answers, students'
dissatisfaction with the system, and the fact that some
students did not actively try to find answers to their

questions support the claim made by Koentjaraningrat (1971) that Indonesians, in general, have the attitude of thinking that everything in life will be given [by God, by other people, by luck/fate, etc.] without their own efforts. Thus, students will always depend on the educational system to provide "every answer" to their problems and needs. This claim is in line with Beeby's claim (1979) that there is little in the average classroom to encourage pupils to use their imagination, to question, to seek solutions of their own to problems within and beyond the school walls, or indeed, to show much initiative in any way at all (Although Beeby's claim is mostly concerned with elementary and secondary school students in Indonesia, by inference those trained in this condition can be expected to carry on in tertiary education). In some cases, students may only expect the educational systems to provide guidance and directions (instead of "answers"), so that they themselves will be able to look for "answers" to their problems. Especially in the tertiary level of education, the students are expected to be independent and mature individuals who are able to and have the courage to initiate their own way to look for "answers" to their problems. This kind of change is certainly needed to support national development, as Koentjaraningrat (1971) stated, since the pessimism and the "wait to be given" attitude is impeding the national development. Therefore, students are to be motivated,

guided, and directed, as users of the information systems,
to be independent individuals, by the educational
institution [perhaps] through its guidance and advisory
services.

6. <u>Average of questions answered, time, being active,
efforts, importance, completeness and helpfulness of
answers</u>

These findings provide an insight into student
perceptions of the system performance between the resident
and non-resident students (see Summary Table 1, section 9).
In both academic and bureaucratic situations, resident
students reported higher numbers of questions being answered
than non-resident students. This finding may indicates that
there are more problems hindering the system in meeting the
information needs of non-resident students than resident
students. Furthermore, both resident and non-resident
students reported more frequently of their questions being
answered in academic situations than in bureaucratic
situations. This finding may suggest that both systems are
more responsive to academic problems than bureaucratic
problems, perhaps because academic problems are considered
the very substance of the educational process.

The illustration of resident students and non-resident
students in terms of the number of questions answered, the
degree of being active, and the perceived effort expended,

may indicate that the number of questions answered is
consistent with the degree to which students actively seek
information (0=not active, 1=active) and perceived effort
expended (scale 0-6, 0=no effort at all, 6=the highest
effort possible), in a way that resident students reported a
higher degree of being active, and higher effort expended
than non-resident students. One possible reason underlying
this condition is the fact that resident students benefit
more from the environment that provides a variety of
services on their campus, while non-resident students do not
have a campus with a variety of services available, and they
are not aware of (or do not have) many other possibilities
of services available to them (Kaye and Rumble, 1981;
Wilson, 1978), they feel helpless and isolated/separated,
and they have other competing priorities (Feasley, 1983;
Fisher in Crocker, 1982; Robinson, 1981).

A different picture appears in terms of the perceived
importance (scale 0-6, 0=not important at all, 6=the most
important) of getting answers to questions, where resident
students perceived a lower degree of importance in getting
answers to their questions than non-resident students in
both academic and bureaucratic situations (Summary Table 1,
section 9). If this finding is related to the degree of
being active and effort expended, it may seem true that,
although getting answers is highly important for non-
resident students, they may not know what to do since

resources are not always clearly available nearby.

Furthermore, both student groups perceived a lower degree of importance of getting answers in academic situations than in bureaucratic situations. This condition perhaps is due to the fact that both student groups understood that they were able to look for answers to academic problems by themselves with their own competence, and through the learning process itself, while answers for bureaucratic problems had to be sought from the system and they were highly important for the students to be able to keep on going in the system.

In terms of the average time of getting answers (0=now, 1=later, 2=after the problem was over), both resident and non-resident students in academic, as well as bureaucratic situations, reported that they obtained answers to most of their questions immediately, when the question was asked. While resident students reported that they got answers to their academic problems more slowly than their bureaucratic problems, non-resident students reported that they got answers to their academic and bureaucratic problems in a similar time period. There is an indication that resident students obtained answers to their bureaucratic problems faster than non-resident students did. This condition may indicate that while resident students can get answers to their bureaucratic problems directly from their officers or friends on campus, non-resident students must either travel

to the regional office directly or indirectly through mail or telephone to get answers to their bureaucratic problems.

Resident students reported that they perceived answers to their academic and bureaucratic problems were less complete (perceived completeness: 0=partial, 1=complete) than non-resident students (Summary Table 1, section 9). Resident students also perceived that the answers to their academic problems were less complete than answers to their bureaucratic problems; while non-resident students perceived that the answers to their academic problems were more complete than answers to their bureaucratic problems.

Both student groups perceived that answers to their questions in academic and bureaucratic situations were relatively helpful (perceived helpfulness: 0=not helpful, 1=helpful but not as expected, 2=helpful as expected) in the way they had expected. Resident students perceived answers to their academic problems were less helpful than answers to their bureaucratic problems. Non-resident students, on the other hand, perceived answers to their academic problems were more helpful than answers to their bureaucratic problems. This condition may indicate that academic information provided by the resident university systems is not helping the resident students in solving their academic problems. Similarly, bureaucratic information provided by the non-resident university system may not helping the non-resident students in solving their bureaucratic problems.

Failure Analysis

This analysis provides an elaboration of the students'
insight into the system, especially when their questions
remained unanswered (Summary Table 2). For resident
students, 17.3% of all their questions went unanswered. For
non-resident students, 27.4% of their questions remained
unanswered. The results of the failure analysis of those
unanswered questions based on the twelve variables
investigated in this study are discussed in the following
sections.

1. Range of unanswered questions of resident and non-
resident university students

Question Descriptions

The findings indicate that in academic situations,
the range of questions that resident students reported
unanswered were about self-ability and evaluation, strategy,
academic personnel, and friends (Summary Table 2, section 1,
column 1). When the questions about self-ability and
evaluation remained unanswered, there may be an indication
that students lack self-confidence, self-esteem, and self-
assurance.

Furthermore, the fact that resident students asked
about strategy in academic situations may show that they
lacked a strategy or they may not have had enough study

skills to go on with their learning process. This condition may indicate that students need help acquiring skills necessary for studying and guidance in how to study.

Questions about academic personnel and friends that remained unanswered may suggest concerns of resident students about people in their surroundings. Not all questions about other people can be answered because the questions sometimes involve privacy and confidentiality. Therefore, even when the system is trying to answer students' questions about academic personnel and friends, it must screen the questions carefully and provide only objective information.

Non-resident students reported questions in academic situations that remained unanswered. Those questions were about course content, self-ability, strategy, and academic support. Again, course content for non-resident students was delivered through the modular instructional materials (Summary Table 2, section 1, column 2). Thus, questions about course content that went unanswered may indicate a problem with the modular instructional materials, perhaps in terms of the nature of the subject matter area, or in terms of the design of the instructional materials. However, questions about course content that went unanswered may also be understandable to some extent, since in some cases students are expected to understand and try to make an effort to understand the course content by themselves, not

through a cooperative effort with friends or anybody else. Questions about self-ability and strategy in academic situations that remained unanswered may once again indicate that students lack self-confidence and self-esteem.

In bureaucratic situations (Summary Table 2, section 1, column 3), once again resident students reported a large number of unanswered questions about academic personnel and friends. This finding may indicate the questions or gaps that resident students had in bureaucratic situations and that the system needs to be aware of. However, this condition may require a careful and objective action from the system to resolve the problem, once the system is aware of the problem. That is only when the system feels that such unanswered questions will hinder the students' progress in their learning process.

Other questions of both resident and non-resident students which reported went unanswered were about grades (Summary Table 2, section 1, column 3 and 4). Grades in the educational process are considered one of the feedback mechanisms. When students do not receive (or were delayed in receiving) feedback about their progress, their work and their achievement, their learning progress may be hindered. This issue may also be related to the fact that some resident students' concern about self-evaluation remained unanswered. When they did not receive feedback on their progress, they may not have known how to evaluate

themselves; thus, they might be lacking self-confidence in continuing their movement in the learning process.

Furthermore, registration was reported as an unanswered concern by both the resident and non-resident students in bureaucratic situations (Summary Table 2, section 1, column 3 and 4). These unanswered concerns about registration may indicate that there is a problem with the registration systems - the process and procedure of registration and the information about the registration process and procedures - in both resident and non-resident universities. Registration is the entry point for all the learning processes to begin in a formal educational institution; therefore, the procedures, policies and regulations must be clear enough to be followed by students.

In bureaucratic situations, both student groups also reported that their concerns about their self-ability and evaluation remained unanswered (Summary Table 2, section 1, column 3 and 4). Once again, this condition may indicate the students' lack of self-confidence, self-esteem and self-assurance to move across time and space in bureaucratic situations. However, the students themselves may be able to provide answers to these concerns with some help from a counseling service, some encouragement and motivation from the academic personnel (i.e., instructors, academic advisors), and some support from their peers.

Non-resident students facing bureaucratic situations

reported unanswered concerns that included logistics, academic support, and strategy (Summary Table 2, section 1, column 4). Once again these concerns may indicate there is perhaps a problem with the distribution system of the instructional materials, individual assignments, and other forms from the central office to the regional offices, and perhaps also a problem with the allocation system of materials to be distributed to regional offices. Also, the concern about strategy may indicate that non-resident students do not understand what they should be doing in order to solve their bureaucratic problems.

Nature and Focus of Questions

Looking at the nature of unanswered questions, it was found that most unanswered questions of both resident and non-resident students in academic and bureaucratic situations were WHAT, HOW, and WHY questions (Summary Table 2, section 2). Furthermore, the focus of unanswered questions of resident and non-residents was mostly the SITUATION. These gaps may indicate that students perhaps do not have an understanding of the situational conditions of their problems in the learning process, that they perhaps do not have knowledge of the way to solve their problems in the learning process, and that they may also not have an understanding of the reasons why they are experiencing the problems in their learning process.

In academic situations, moreover, SELF was the predominant focus of the unanswered questions reported by both resident and non-resident students (Summary Table 2, section 2, column 1 and 2). This finding is perhaps related to the findings about the description of resident and non-resident students' questions, which indicate that self-ability and evaluation are the major descriptions of the unanswered students' questions. Since SELF is the only actor in most academic situations which involve learning and studying (independently), then it is understandable that SELF becomes the focus of most unanswered questions in academic situations. This condition may also indicate that both resident and non-resident students were questioning themselves, and they lacked self-confidence, self-esteem, and self-assurance.

In bureaucratic situations (Summary Table 2, section 3, column 3), OTHER PERSONS and SELF were the other predominant foci of the unanswered questions for resident students, since resident students' questions were frequently focused on academic personnel and friends, and on self-ability and self-evaluation. This finding may indicate that in bureaucratic situations, resident students' problems are mostly about other persons and themselves. Although not all problems about other persons and about students themselves can be solved through the system's intervention, a guidance or help from the system might be useful in helping the

students to solve those problems.

For non-resident students, however, SELF and OBJECT were the other predominant foci of their unanswered questions (Summary Table 2, section 3, column 4). These foci are perhaps related to the range of the non-resident questions about self-evaluation, logistics and academic support. This finding may indicate that in bureaucratic situations, non-resident students' problems are mostly about themselves, and about objects such as instructional materials, individual assignments, registration and other forms, additional reading materials, references, etc. These problems may hinder the students' learning process if they remained unanswered; especially when students do not know where to look for those materials and when those materials will be available in their regional office.

2. Expected uses of answers

The findings for this variable indicate that both resident and non-resident students expected to be able to use answers to their unanswered questions for getting understanding, ideas, and pictures of the situation, and for keeping on going through their movement through time-space contexts (Summary Table 2, section 4).

Resident students in academic situations (Summary Table 2, section 4, column 1) also reported expectation that their answers would have been used for getting started and

motivated. Non-resident students in academic situations reported expectation to use their answers for getting support, confirmation and reassurance. These findings may, once again, indicate the lack of motivational support for resident and non-resident students.

Both resident and non-resident students in bureaucratic situations expected to use answers to plan and get understanding, ideas and pictures (Summary Table 2, section 1, column 3 and 4). They intended to make preparations, decisions and plans and also to gain their understanding, ideas, and picture about the gaps that they were facing. Non-resident students expected to use those answers to keep on going in their movement through time-space in their learning process. When their problems remain unanswered, their movement through time-space in their learning process may be hindered.

3. Perceived unsuccessful strategies

Perceived unsuccessful strategies were reported by resident and non-resident students when their questions remain unanswered, although they actively tried to find answers (Summary Table 2, section 5). The findings indicate that in academic situations, resident and non-resident students reported that asking friends and significant others was the most unsuccessful strategy. In addition to the fact that some academic problems require individual effort

instead of cooperative effort with friends, perhaps their friends and significant others were also facing the same gaps and problems, and therefore asking them in that condition would not have helped. Furthermore, especially for non-resident students whose friends and significant others were from other universities outside the non-resident university, their friends and significant others might not be able to help bridge their gaps.

Resident students also reported two other perceived unsuccessful strategies, including using one's own effort, and asking somebody with authority (Summary Table 2, section 5, column 3). If students did not have proper understanding of their academic problems, their own efforts would have been in vain. This condition might create the feeling that students are incapable, which may further lower their self-esteem. Asking somebody with authority may not give any results, since in most academic problems, students are expected to study independently and they can only ask somebody with authority for guidance to look for answers to their academic problems, not for the answers themselves

Non-resident students in academic situations reported that their perceived unsuccessful strategies were reading and studying, asking somebody with authority, asking oneself and thinking, and asking something (Summary Table 2, section 5, column 2). The rest of the perceived unsuccessful strategies of non-resident students, except asking somebody

with authority, may illustrate their lack of success in
studying alone and independently. Some problems underlying
this condition, as noted in an earlier study of non-resident
students' study habits by Sumadiredja (1987), might be the
modular instructional materials through which the course
content was delivered, the lack of study skills, inadequate
prior knowledge, non-supporting study environment, and the
lack of study facilities. Sumadiredja (1987) claims that
these problems affected the non-resident students' learning
outcome negatively.

The other perceived unsuccessful strategy of non-
resident students was asking somebody with authority
(Summary Table 2, section 5, column 2 and 4). A similar
reason, which was mentioned earlier in the case of resident
students, can be extended to this case of non-resident
students. In addition, since somebody with authority in the
world of non-resident students consists only of
bureaucratic/administrative personnel and a limited number
of tutors, non-resident students might not be able to set
high expectations for obtaining answers to their academic
problems from these personnel. Asking somebody with
authority, when that person is most apt to be bureaucratic/
administrative personnel, for help with academic problems is
unlikely to be fruitful.

4. Reasons for not being active

Although their questions remained unanswered, some
students had their own reasons for not being active in
seeking answers to their questions (Summary Table 2, section
6). In academic situations, resident students reported that
their reasons for not being active were that they saw no
possibility and no other ways of getting answers, and that
their questions did not matter. The first two reasons may
indicate that resident students, to a certain degree, were
pessimistic and lacking confidence. This condition may be
due to the fact that in most academic programs, students are
expected to work on and solve their own problems, and they
should not rely on anybody else. Thus, when they stumbled
over academic problems, nobody else could help them. Once
again, this pessimism has been claimed to be one of the
general Indonesian characteristics which needs to be altered
in order to achieve national development goals
(Koentjaraningrat, 1971). Also, this pessimism is claimed
to result from educational traditions in Indonesia which
implicitly trains the students to be dependent on academic
personnel (teachers, lecturers, tutors, etc.) (Beeby, 1979;
Keyfitz, 1988).

It was reported by resident students that their
questions did not matter, not only in academic situations,
but also in bureaucratic situations (Summary Table 2,
section 6, column 1 and 3). This may indicate that resident

students sometimes asked questions only for the sake of asking, perhaps as an expression of complaint, dissatisfaction, or egotism. This could also represent students' pessimism directed towards an unresponsive system.

Non-resident students reported a different set of reasons for not being active, including time constraints, seeing no possibility for finding answers, having figured out the answers for themselves (Summary Table 2, section 6, column 2). Time constraints seem to be the major reason for not trying to be active for non-resident students, who were mostly workers and/or housewives having other priorities and assignments.

The other reason may indicate that some non-resident students were pessimistic. This condition may be due to the fact that non-resident students are expected to study independently, and academic support for studying independently was not available or accessible to them. Also nobody else (i.e., friends) could help them in their isolated situation and dispersed location.

Non-resident students' reason for having figured the answer for themselves should be seen positively, in that they made the efforts to study and to come up with their own understanding. However, this condition raises a question whether their understanding is correct.

In bureaucratic situations, resident students reported that another reason for not being active was they saw no

possibility for getting answers. In many cases, they also reported that they just waited and did nothing. These reasons may indicate resident students' pessimism about getting answers to their questions.

An indication that both resident and non-resident students might be pessimistic was shown through some of their reasons for not being active in trying to get answers to their questions, i.e., they perceived no possibility for getting answers to their questions, they perceived no other ways to get answers, and in many cases they just waited and did nothing (Summary Table 2, section 6).

In addition, non-resident students in bureaucratic situations reported that one reason for not being active was that their questions were rhetorical. This finding may again indicate that some non-resident students were asking questions only for the sake of asking, perhaps as an expression of their complaints, dissatisfaction, or egotism. Also, non-resident students themselves might already know answers to those questions. This finding may also represent dissatisfaction directed toward the system which is not functioning or responding well to the non-resident students' needs.

5. Average of activeness, effort expended, perceived importance of answer

The findings indicate that in academic situations, resident students were relatively more active (0=not active, 1=active) in pursuing answers to their unanswered questions than non-resident students (Summary Table 2, section 7). Such a condition may be due to the fact that resident students have time for studying and also that, to a certain extent, they have sources available on their campus. On the contrary, non-resident students may not have adequate time for studying since they have other competing priorities, and they are not likely to have local sources available. This finding may also be related to the data that resident students reported a relatively lower degree of effort expended (scale 0-6, 0=no effort at all, 6=the highest effort possible) for trying to get answers than non-resident students. Since the sources are usually available on campus, in one location, resident students did not have to expend as much effort as non-resident students who had to look for their sources everywhere possible. Furthermore, resident students also perceived a lower degree of importance (scale 0-6, 0=not important at all, 6=the most important) for getting answers than non-resident students in academic situations. Such a perception may be due to the fact that unanswered resident students' questions covered information about OTHER PERSONS (academic personnel and

friends) who are seen a helpers or facilitators in solving academic problems. Also, their questions were about SELF, which can be answered by the students themselves; perhaps with some help, encouragement and support from academic personnel, peers and a counseling service. Non-resident students' questions were about course content, self, and academic support, which, to some degree, may be highly important to non-resident students for solving their academic problems and for continuing their movement across time and space in their learning process.

In bureaucratic situations (Summary Table 2, section 7, column 3 and 4), resident students were relatively less active than non-resident students trying to find answers to their unanswered questions. This condition may be due to the perception of resident students that administrators surrounding them on campus will take care of their bureaucratic problems; while non-resident students can depend only on themselves for both academic and bureaucratic problems since they cannot expect anybody else to take care of them. However, resident students reported expending as much effort as non-resident students. Furthermore, resident students perceived a lower degree of importance for getting answers in bureaucratic situations than non-resident students. Once again, one possible explanation for this situation is that resident students may not feel responsible for taking care of their bureaucratic problems, since they

usually have administrators taking care of them, and when
they asked questions in bureaucratic situations, they may
just express their complaints and dissatisfaction with the
system since many of their questions were rhetorical, and
did not matter. On the contrary, non-resident students may
feel they are responsible for their own bureaucratic
problems, and when their bureaucratic problems remained
unsolved, their movement across time and space in their
learning process may be hindered.

   In general, the results of this failure analysis have
indicated that there may be some issues, concerns and
problems that are not being dealt with effectively by the
current system in each educational institution in Indonesia.
The findings of this failure analysis do not, however,
suggest that the current system of each educational
institution must provide answers to all students' questions,
issues, concerns, and problems, because there are many cases
where they do not lend themselves to any answer. In such
cases, educational institutions may provide information
which explains the case clearly to their students, so that
the students can understand their situations. However, when
the students' questions remain unanswered, their gaps remain
unbridged, their situations remain problematic, then, their
movement across time-space context in their learning process
may not be fruitful. Thus, the current system in each

educational institution may need to facilitate the process
and help the students, so that the students' learning
process may have the desired results.

This section has discussed the range and the complexity
of information needs of individual students in resident and
non-resident educational settings in Indonesia. This
section has also shown clearly that, despite the varied
information needs, there is also a degree of similarity in
the information needs of the resident and non-resident
students. This section has also discussed possible reasons
and rationales underlying the findings. The following
section - the limitations, conclusions, and recommendations
section - will present conclusions based on the findings of
the information seeking and use behaviors of resident and
non-resident university students, and also on the Sense-
Making method and the user-oriented approach in this study
and future research.

Limitations of The Study

This study has resulted in some important findings
which can serve as a framework for designing information
systems in resident and non-resident higher education
institutions. Furthermore, to researchers in the field,
this study has indicated that the approach and methodology
employed were useful in tapping information seeking and use
behaviors. Nevertheless, this study is also subject to some

limitations that influenced the results.

In general, the approach and the methodology have been appropriate and adequate for this study which was intended to tap information seeking and use behaviors of resident and non-resident students in tertiary education. The findings, which are useful for guiding the information systems designers in conventional and distance education universities to design information systems for each student group, have demonstrated the applicability of Dervin's Sense-Making approach, as a user-oriented methodology, for information system design. More research studies in a wide variety of contexts are recommended to provide frameworks for developing a number of information systems that can benefit from using this methodology. However, this methodology is labor intensive (i.e., the one-on-one interviewing process, the classification process, etc.). Therefore, more research studies are needed which provide alternatives for the data gathering process so that it is less labor intensive.

The results of the pretests and actual field use of the instruments employed for data collection in this study indicate that the instruments were appropriate to collect the necessary data for the purpose of the study. Since these instruments were designed specifically for this particular study in a particular setting, they would require some modification and revision for use in other studies.

Furthermore, use of the instrument involves a redundant, and time-consuming interview process. For non-resident students who had completed their days or week of working full time, the time-consuming interview process after working hours or during the weekend was burdensome and fatiguing. Such a condition also applied to the resident students and the interviewers. Therefore, efforts to refine the instrument into one that will require a shorter interview period and less redundancy is recommended.

The sampling strategy carried out in this study was not free from weaknesses. This unfavorable sampling condition is claimed by Bulmer (in Bulmer and Warwick, 1983), to be a common problem of social research in developing countries. First of all, the central registry for the sampling frame (and/or population) was not available, or where it was available, it was subject to considerable amounts of error. The Open University has a computerized central record processing unit which provided the researcher with the sampling frame of non-resident students. However, the sampling frame provided for this study was not free from errors, e.g., no distinction could have been made between active and non-active students on the list. "Active" students refer to students who were registered and working on courses during the particular semester of the academic year (i.e., 1989/1990). "Non-active" students refer to students who once registered as non-resident students but

were either not registered or working on courses during that
particular semester of the academic year. Information about
non-active students is retained for up to four academic
years, in case they decide to return to work on their
courses again. This information is filed together with the
information on the active students. At the time of this
study, no distinguishing indicator was available. Thus,
several non-active students were also sampled for this
study, although they were turned down by the interviewer
when they came for the interview. This condition created
some psychological problems for the respondents who felt bad
about being turned down, some financial problems for the
researcher to reimburse their travel expenses as promised,
and a problem for the researcher to redo the sample.
Furthermore, at the time of this study, the computer
generated list of the sample frame from the University of
Indonesia and Hasanuddin University were not available. The
researcher had to select and determine the sample from a
collection of registration receipts in the administrative
office in each university. Certainly, that process was not
efficient.

  Secondly, there was also a problem of low response rate
which caused the researcher to decide on convenience
sampling. This strategy has a potential of adding sampling
bias which, to a certain extent, influences the
interpretation of the results of this study. Although, this

study had a sufficient sample, a study with a larger random
sample is recommended for more generalizable results.

The field process itself had several drawbacks. First,
there was the problem of time. The time of data collection
for this study was somewhat inappropriate for resident
students, since it was the time for the freshmen induction
program. Many activities were held on campus, especially
for freshman resident students, which might explain the low
response rate and the difficulties in recruiting freshmen as
one stratum of the sample of resident students. Moreover,
non-resident students preferred weekend interviews to after-
working-hours interviews. However, since the researcher had
a limited time for data collection and a limited number of
interview personnel, non-resident students' preferences
could not be always honored. Some of them were asked to
come for after-working-hours interviews. This condition may
have influenced the interview process, and the results of
the data collection process.

Second, there was a problem with respondents' attitudes
toward the study, the researcher, and the interviewers.
Non-resident students in Jakarta reported that they had
become subjects of many investigations and/or research
studies undertaken by the Open University or other
institutions. This caused boredom for them and resentment
that they had been asked once again to participate in a
study. Non-resident students in Ujung Pandang saw the

interview process as a means for them to make their voice heard by the Central Office since the researcher is from the Central Office. Therefore, they were enthusiastic about participating in the process. Resident students in Jakarta showed a higher degree of reluctance about participating in the interview process, since they perceived the process as an inspection and/or evaluation process for them (including evaluation of their academic performance) than resident students in Ujung Pandang. Furthermore, the relationship between the researcher, the interviewers, and the respondents may be a potential source of bias in the interview responses, in that the majority of respondents perceived (or have known) the researcher and interviewers as government agents from the Central Office of the Open University, not as researchers and interviewers.

Third, there was a problem with the interviewers, who had been trained for four days prior to their assignments in the field. However, longer and more intensive training may be needed for further refinement of the interviewing skills, especially in terms of the task of the interviewers to clarify, to probe, and to chain the respondent in the process of recalling her/his experience during the interview. The skills of the interviewer to clarify, probe, and chain the respondent's responses are important for helping the respondent to recall his/her past experience clearly.

The collected data were then analyzed descriptively using content analysis and descriptive statistics. The content analysis procedure is a tedious process, especially for an inexperienced researcher, since the content analysis procedures requires patience, attention to detail, and a thorough process of studying and classifying data.

Because some of the content analysis schemes for this study were established inductively, those schemes are only applicable to this study. Some other content analysis schemes were established deductively, especially Dervin's schemes. The findings of this study show that Dervin's schemes are applicable and appropriate for classifying data. The current interjudge reliability coefficients of the content analysis schemes may need further refinement since those coefficients resulted from only two coders including the researcher. Two coders including the researcher may expose the interjudge reliability coefficients to a possible subjective bias. A larger number of coders and the exclusion of the researcher would perhaps reduce the possible bias and subjectivity of coders and researcher.

Furthermore, the descriptive content of the results of this study is limited to Indonesia, specifically Jakarta and Ujung Pandang. The results of this study were not intended for generalization across other settings, although they can be used as a starting point for further investigation in a variety of contexts. However, the findings of this study on

the systems' performance and design can be, to some extent, used as a framework for designing and improving the performance of information systems in conventional and distance education institutions. Also, the results of this study are limited to the findings of the twelve variables investigated. There are other variables which were not considered, discussed, or investigated in this study, e.g., culture, socioeconomic stratification, provision of available information, individual differences and characteristics, and the like, that may be valuable in describing the information seeking and use behaviors of information users. Further studies on those issues are needed.

Conclusions and Recommendation

Conclusions

There are two different perspectives that can be used in drawing conclusions from this study. One focuses on the findings; the other one focuses on the approach and method used to obtain the findings. Both are discussed in this section.

Focusing on the findings, the results of this study show a very broad coverage of the elements of an education system. This condition is perhaps due to the fact that the main substance in this study is information seeking and use

behaviors of resident and non-resident university students, which cover behaviors of students seeking and using a variety of information sources in their learning process. The coverage of information in this study has been purposefully limited to cover only academic and bureaucratic information. However, the findings still indicate a broad coverage of students' perceptions which include various elements of academic information, bureaucratic information, and also advisory information. Therefore, the conclusions drawn based on the results of this study have a broad coverage, and touch upon many elements of a conventional and distance education system.

The results of this study have shown that there are similarities and differences of the information seeking and use behaviors of resident and non-resident university students facing academic and bureaucratic situations. The similarities and differences can be found in terms of (1) the range of students' questions (description of questions, nature of questions, and focus of questions); (2) the expected and actual uses of answers to their questions; (3) the strategies employed to obtain answers to their questions; (4) the sources used for obtaining answers to their questions; (5) the reasons for not actively seeking answers to their questions; (6) whether or not their questions were answered; (7) the time for obtaining answers; (8) their being active in finding answers; (9) the effort

expended to obtain answers, (10) the perceived importance of obtaining answers to their questions, (11) the perceived completeness of the answers obtained; and (12) the perceived helpfulness of the answers to their questions once those answers were obtained. Furthermore, similarities and differences can also be found in the problems encountered when students' questions remained unanswered.

As mentioned earlier, the similarities indicate that there are generalizable patterns of information seeking and use behaviors of students as information users, whether or not they are resident or non-resident university students. For administrators, educators, and information system designers, these generalizable patterns highlight some factors to be considered in designing the information system for both resident and non-resident university students. These generalizable patterns are also useful for helping administrators, educators, and information system designers to realize that, in fact, the variety of students' information needs are not overwhelmingly large. The idea of generalizable patterns counters the notion that, if one looks at information needs as individually determined, it would be impossible to handle the diversity of results (Dervin, 1982).

The differences that were found in this study reflect the situational differences of being either resident or non-resident university students. These situational differences

may perhaps be influenced by many different factors which require further investigation. However, the differences which occur between the information seeking and use behaviors of the resident and non-resident students are useful for administrators, educators and information system designers as a framework for designing information systems for resident university students and non-resident university students, since each system has been shown to have different requirements from the other. These differences also show how different kinds of information are important to users, and the extent to which users are successful in obtaining the kind of information that they need (Dervin, 1982).

The results of the failure analysis implicitly illustrate the conditions of the current information systems that are available for resident and non-resident university students. For administrators, educators and information system designers, these results may be used as a framework to address the problems and to modify, revise and improve the information systems in each educational setting to better serve the target user groups.

The following results, highlighted in the analysis of the findings of this study and presented under three categories—academic information, bureaucratic information, and advisory information—are of direct relevance to the design of information systems in resident and non-resident university settings.

1. Academic Information

Resident and non-resident students reported that their major concerns in academic situations were academic support, including reading materials, references, library services, and translated versions of reading materials (discussion section, p. 195, 200, 204, 214; failure analysis, p. 224, 227, 229); the course content (discussion section, p. 195, 196; failure analysis, p. 224); and independent learning (discussion section, p. 208, 209, 218; failure analysis, p. 228, 231, 232). Their concerns may indicate a problem in the existing academic support system. These concerns may also suggest a problem with the course content which is delivered through face-to-face classroom meetings in resident universities and through the modular instructional materials in non-resident universities. Also, these concerns may indicate a problem with students' efforts in individual learning and studying alone, which were not always successful.

In their efforts to find academic information to solve their problems so that they can understand their situations, be able to plan, and be able to continue their learning process, both resident and non-resident students indicated a strong reliance on friends and significant others as sources of information

(discussion section, p. 196, 197, 202, 204, 207, 210, 212, 213, 214). They also indicated a relatively high degree of use of academic personnel who are available through the resident and non-resident university systems as their sources for information (discussion section, p. 197, 198, 204, 208, 209, 210, 212, 213). However, both student groups also reported that there were times when reliance on friends, significant others, and academic personnel was not successful (discussion section, p. 209, 210; failure analysis, p. 230, 231, 232). Such a condition may suggest the need for a variety of academic information sources which can be supplementary.

2. Bureaucratic Information

In bureaucratic situations, resident and non-resident students reported that they had problems in following some administrative procedures which they have to follow to facilitate their learning process. Their concerns include registration, grades, and academic regulations and procedures (discussion section, p. 198, 199, 201; failure analysis, p. 225, 226). These concerns may indicate that the information about registration, grades, and academic regulations and procedures which is provided by the educational institutions (through booklets, university catalogs,

etc.) does not reach the students, or, if it does, students may not understand it. These concerns may also indicate a problem with the current registration procedures, grading systems, and academic regulations and procedures.

Non-resident students specifically reported concerns with logistics, mostly in terms of the availability and distribution of instructional materials, individual assignments, registration forms, and other forms (discussion section, p. 199, 200, 204; failure analysis, p. 227, 229). Their concerns may indicate problems in the distribution and allocation systems of those materials from the central office to the regional offices, and the communication of these problems to the students.

The strategies employed by both resident and non-resident students to find bureaucratic information that will help them to understand their problems, to be able to plan, and to continue their learning process, include contacting friends and significant others (discussion section, p. 197, 202, 204, 207, 210, 212, 213, 214), and also contacting bureaucratic personnel in their educational institutions as sources of information (discussion section, p. 197, 198, 204, 208, 209, 210, 212, 213). Both student groups, however, reported that there were cases when contacting friends,

significant others, and academic personnel for finding

bureaucratic information was not successful (discussion

section, p. 209, 210; failure analysis, p. 231, 232).

Such a condition may suggest the need for a variety of

bureaucratic information sources which can be

supplementary to each other.

3. Advisory Information

In academic as well as in bureaucratic situations,

resident and non-resident students reported feelings of

inadequacy about themselves, their academic ability,

and their information seeking strategies (discussion

section, p. 192, 193, 202, 203, 204, 205, 206; failure

analysis, p. 223, 224, 226, 227, 228, 229). These

concerns seem to indicate that the students may lack

motivational support, self-confidence, self-esteem and

self-assurance, which may hinder their understanding of

problems, as well as their ability to plan and to

continue their learning process.

Facing these kinds of problems, resident and non-

resident students mostly rely on themselves as the

source of information. They also rely on their friends

and significant others (discussion section, p. 197,

202, 204, 207, 210, 212, 213, 214), and institutional

personnel (discussion section, p. 197, 198, 204, 208,

209, 210, 212, 213). The fact that these strategies

are reported as not always working well (discussion
section, p. 209, 210; failure analysis, p. 231, 232)
may indicate the need for a variety of advisory
information sources.

For administrators, educators and information system
designers in higher education institutions in Indonesia, the
results are encouraging for they offer a framework for
handling the diversity of information needs in the context
of resident and non-resident universities. Such a
framework, offered from the evidence, shows a demand for
better and more responsive information systems in higher
education institutions designed for resident and non-
resident university students in Indonesia.

The importance of this study lies not only in the
discovery of the phenomena being investigated (which are
useful for information system design in these specific
higher education institutions), but also in the positive
demonstration of the usefulness and the potential of the
user-oriented approach and the Sense-Making method. The
approach and the method employed in this study have
successfully tapped the information seeking and use
behaviors of the resident and non-resident university
students based on the twelve variables investigated in the
study. By conducting this study in line with the user-
oriented approach and employing the Sense-Making method

based on that particular approach, the results of this study have increased our understanding of how resident and non-resident university students seek and use information sources in educational institutions and try to make sense out of their academic and bureaucratic problems. The implications from this study should be directly useful in the practice of providing information in higher educational institutions, especially in Indonesia.

Furthermore, the approach and method employed in this study, which was originated and developed by North American scholars, has proven to be useful in another culture, namely, Indonesia.

Beyond providing rich and detailed explanations of the phenomena, the results of this study also confirm several assumptions posited by researchers in the field who are oriented toward the user-oriented approach. For example, Dervin's assumption that information users are active, creative individuals who perceive themselves as moving through a constantly changing time/space contexts where the individual's role is to make sense out of the ever-changing environment (Dervin, 1983). Also, Dervin's assumption that there are underlying, generalizable patterns to the ways that individuals see and move through their perceived realities (Dervin, 1983; Nilan and Fletcher, 1987). In addition, the assumption of Belkin, Oddy and Brooks (1982) that there are fundamental "mismatches" between the logic

used by current systems to organize knowledge and the ways
that users articulate their information needs. Finally, the
assumption of Taylor (1986) that the perception of users
which is added to information is a significant key to
understanding the whole information seeking and use process.

Recommendations

Despite the limitations of this study, the approach and
methods employed have proven to be useful and appropriate
for tapping information seeking and use behaviors from the
users' perspective based on a new paradigm in the field.
Furthermore, the data collection technique - the Storyboard
Micro Moment Time Line Interview - is a valuable technique
for collecting data about the situation, the gaps and the
use variables of the individual user's information needs
across time and space in order to generalize patterns of
information seeking and use behaviors of individuals from
the individual's perspective. Also, further research is
recommended using the same approach, method, and data
collection technique in other countries, disciplines, and
cultures.

The results of this study also highlight some important
points of consideration for administrators, educators,
information system designers, and information practitioners
in the field in designing information systems for resident
and non-resident students. It may seem that the

recommendation offered as the results of this study show a broad coverage of the elements of an education system. This condition may be due to the fact that, although the coverage of information in this study has been purposefully limited to cover only academic information and bureaucratic information, the students' perceptions touch upon various elements of academic information, bureaucratic information, and also advisory information in conventional and distance education universities.

The following recommendation are offered to educators, administrators, and information system designers in conventional and distance education universities to serve as a framework for designing systems that will address the students' information needs. These recommendations will also be divided into three categories: academic information, bureaucratic information, and advisory information.

1. Academic Information

The resident and non-resident universities may want to make efforts to fulfil the students' academic information needs, which include their needs for academic support, help in overcoming their problems with understanding the course content, and help in learning to study independently. First, provision of academic support for both resident and non-resident students, in terms of quantity and quality, includes

reading materials, references, library services, and translated versions of reading materials may be provided by the educational institutions. Also, resident and non-resident universities may want to provide direct information to enable students to obtain academic support whenever it is not available from the university itself. Second, resident and non-resident universities may want to consider further investigation concerning the course content that is delivered through face-to-face classroom meetings as well as through the medium of printed modular instructional materials. The results of such an investigation may point to necessary improvement of the course content (whether the problem is the nature of the subject matter area itself, or the design of instruction, etc.), which will help the students to understand the course content. Also, these universities may want to provide a help mechanism, such as peer tutoring, to assist students in overcoming their problems. Third, resident and non-resident universities may help their students to acquire study skills, perhaps through a guidance service, so that students will be able to understand their problems in the learning process, know the ways/strategies to overcome their problems, and have directions for obtaining information to help solve their problems.

Students' reliance on academic personnel as a

primary source of academic information needs to be maintained and strengthened. Furthermore, as noted earlier, resident and non-resident students rely strongly on their friends and significant others for obtaining academic information. This condition points to the possibility of the resident and non-resident universities organizing the students into study groups (or self-help groups) which have peer tutoring and peer advising functions. The study groups (or self-help groups) will allow the students to have informal information exchanges among themselves. Provision of a variety of academic information sources is recommended, so that the students will have a variety of choices available to them.

2. Bureaucratic Information

Resident and non-resident students' problems in following some administrative procedures, such as registration, grading system, and academic regulations and procedures, can be addressed by both university systems through, among others, communicating the information about registration procedures, grading and reporting systems, and academic regulations and procedures to the students. Such information may be offered through an induction program at the beginning of each semester, periodic meetings during the

semesters, and also through institutional publications
and flyers. In the case of non-resident students,
where face-to-face meeting are rarely possible, the
university may provide a stand-by officer, who provides
guidance and information about the administrative
procedures, especially during the registration and
examination periods, in the local post offices and
regional offices. Furthermore, since the non-resident
students reported having time constraints, a
modification of service hours for these students is
recommended. Also, resident students' concerns about
completing their course selection forms may indicate
the need for the resident university to simplify the
procedures, and to provide information that can guide
the students in completing the course selection forms.

Non-resident students' concerns with their
logistics, especially in terms of the availability and
distribution of instructional materials, individual
assignments, registration forms, and other forms, may
indicate a need for the non-resident university to look
at its distribution systems, and, perhaps, to provide
information which informs students about the problems
that prevent those materials from being available on
time in a particular place, and the times and places
that those materials will be available to them. Such
information about the problems and the dates and places

where those materials will be available for students may help reduce the students' concerns. Mass media can be used to deliver this information to students.

Students' reliance on bureaucratic personnel as a primary source of bureaucratic information should be maintained and strengthened. Students' reliance on friends and significant others to obtain bureaucratic information may suggest the possibility of the resident and non-resident universities to organize the students into study groups (or self-help groups). Thus, bureaucratic information from the university can be sent/explained to individual study groups, instead of individual students. Provision of a variety of bureaucratic information sources is recommended so that students have a wide selection of information sources available to them.

3. Advisory Information

The students' concerns about their feelings of inadequacy, their academic ability, and their information seeking strategies may indicate the students' lack of motivational support, self-confidence, self-esteem, and self-assurance. One way that resident and non-resident universities could address these concerns is through providing an advisory and counseling service in each educational institution.

These concerns may also point to the need for human and personal contacts, either direct or mediated, which can help the students maintain their motivation, manage personal problems, and also overcome specific learning problems. Resident and non-resident universities may want to encourage academic and bureaucratic personnel to help students sustain their motivation and overcome their concerns. Efforts for training the academic and bureaucratic personnel in both resident and non-resident university (including professors, academic advisors, lecturers, instructors, tutors, teaching assistants, and bureaucratic officers) (Beeby, 1979; Keyfitz, 1988), so that they will be able to stimulate the students' motivation, self-confidence, and self-esteem to continue on the learning process are recommended. Furthermore, efforts to redesign and improve the presentation of course content through face-to-face meetings in resident universities and through modular instructional materials in non-resident universities (Beeby, 1979; Keyfitz, 1988), e.g. by incorporating the "Attention-Relevance-Confidence-Satisfaction" model (Keller in Reigeluth, 1983) in instruction, are highly recommended. The organization of study groups offers another possibility for providing human and personal contacts which may help maintain students' motivation. Friends within a study

group can also function as peer advisors to help students overcome their personal problems.

In addition, some recommendations are also offered to the conventional and distance education universities in Indonesia. These recommendations specifically emphasize the scientific and intellectual perspective of designing, developing and improving information systems for university students. In order to design, develop and improve the information systems for students in the conventional and distance education universities, specifically in Indonesia, it is recommended for the administrators and information system designers to:

(1) Identify and assess the students' needs before designing, developing and improving the information systems for those students. Although most planning activities in Indonesia are conducted using the top-down logic, insights into what the peoples' needs are will prevent a mismatch between the government's good intentions to provide support for the peoples and the people's needs. A mismatch may cause a waste of financial resources and peoples' efforts. The needs assessment can be done through a study similar to this study. This approach applies specifically to the area of [public] higher education in Indonesia, in terms of planning, designing, developing and improving the

information systems for the students in higher
education institutions.

(2) Incorporate the findings on the students' needs
into the process of designing, developing and improving
the information systems for those students. This
effort will point to the need for selecting and using
appropriate technology in the information systems for
students in both conventional and distance education
universities. The findings of this study, for example,
indicate that resident and non-resident students ask
for more academic support, and that they also feel
inadequate about themselves. These concerns may be
translated into calls for more academic support and
counseling and advisory services, which should be
considered by system designers when planning the
information systems for those students. Furthermore,
non-resident students indicate that they have time
constraints which hinder their participation in the
administrative and learning processes. To meet their
needs, information designers may have to plan on
modifying service hours for non-resident students.
Also, a resident student's information system can be
the only one on campus. A non-resident student's
information system cannot be the only one in the
central office, since it is not accessible to all

students. Rather, it should be accessible to all students in each region. These procedures may cause the process of designing, developing and improving the information system to take a longer time to accomplish, however, these procedures may help the conventional and distance education universities avoid a mismatch in information provision.

(3) It is also recommended that information systems be periodically evaluated and revised in both conventional and distance education, since situational differences faced by resident and non-resident students are always changing. For example, the findings of this study are based on students who were moving through their learning process and facing their academic and/or bureaucratic problems at one point in the time-space contexts. Information systems that are designed based on the findings of this study may not work well when future students face different problems at another point in time during their academic learning process. An evaluation effort should be on-going for the betterment of the information systems in both conventional and distance education universities. Low cost techniques such as an "opinion box" or a "prestamped postcard," could be used for monitoring students' problems and their perception of the systems.

This feedback would serve as input for improving the
information systems.

The present study was a descriptive study to describe
and explain the phenomena of information seeking and use
behaviors of resident and non-resident university students
in Indonesia. It is a step toward designing information
systems in higher education institutions, especially in
Indonesia, which are responsive to the users needs. The
results of this study should be read and used with full
understanding of its limitations as discussed earlier.
Further studies with a wider geographic coverage in
Indonesia and other countries are recommended. There are
also other variables which were not explored in this study,
e.g., culture, socioeconomic stratification, provision of
available information, individual differences and
characteristics, and the like. Further studies which
investigate those facets may discover that information
seeking and use behaviors of resident and non-resident
students are described in different ways. Further studies
in those areas would also build on and extend the results of
this study. Those studies might possibly yield more
generalizable results.

APPENDIX A

INFORMATION SEEKING AND USE BEHAVIOR

INTERVIEWER GUIDE

I. Study Purpose

This study is intended to describe differences in information seeking and use behavior exhibited by non-residential students in a distance education university and residential students in a conventional university. It is concerned directly with the practical issue of who gets what information, from where, how and why. "Information" in this study is classified into two categories: administrative (bureaucratic) and academic (course-related) information. The conceptual perspective taken by this study will be the "user's" view because the study purposes are descriptive and because this perspective has been neglected in the past.

The result of this study is expected to be useful in determining differences in information provision suitable for each education system based on differences in the behavior of the two user groups. It is through this kind of study that both distance and conventional education systems can understand and develop information provision strategies which are sensitive and responsive to the information needs of its particular students.

II. Methods

TIME LINE METHODS

A. General Concept

The time line method is basically a method for interviewing respondents that strives to tap the respondents' experiences in the same way that they were experienced, i.e., by structuring the interview so that discrete conditions (or events) are ordered in time and space in the same order in which they were experienced. Obviously, the interviewer is unable to structure the interview because s/he did not personally experience the same experiences. The responsibility for this ordering then, remains with the respondent, who is the "only" one who was "there".

This process of eliciting experiences as a series of events ordered in time and space is unique (or virtually so) in behavioral science. As such, there are special demands on both the respondent and the interviewer.

On the RESPONDENT'S part, it is very unlikely that anyone has ever paid very much attention to the way they see themselves or their world (exceptions might be spouses, family, close friends, etc., but these exceptions are incredibly rare). Because of this, they have had a hard time sometimes methodologically laying out their experiences as a series of discrete events -- they are not used to someone actually listening to them (and certainly not for an extended period of time)!

The INTERVIEWER, particularly one who has no experience with this particular methodology, also has special demands placed on her by this time-line method.

First of all, the interviewer must be completely familiar with the questionnaire. This means that problems that arise in the interview are handled in such a way that the interview is not effected.

Second, the interviewer has a responsibility to help the respondents talk about their experiences in their own words within the structural constraints of the time-line. This means that in addition to having to stay within the constraints of the questionnaire, you must also guard against influencing the respondent's comments and statements (e.g., you absolutely cannot "fill in gaps" for people, they must strive for the words themselves).

Third, there is also the responsibility of allowing the respondent to talk and for the interviewer to really listen to the respondent.

The time-line, in short, is a method that has been designed to elicit an individual's experiences in such a manner that is consistent with human behavior and human experience. The time-line does this by structuring a face-to-face interview in time and space, in much the same way that people actually experience events. The time-line itself is a structure that allows respondents to "hang" or orient their information needs and behavior in a way that is cognitively "real" to them. The interviewer's role in this experience is (beyond keeping the interview within the time-line structure) very similar to Roger's "unqualified positive regard" with the notable exception that instead of seeming like they are interested in listening to the respondent, the interviewer actually IS interested in listening to the respondent.

B. Specific Method for This Study

First of all, instead of employing "Full Time Line" as Dervin did in several of her studies, this study employs "Abbreviated Time Line" or what we will call a STORY BOARD which limits the time-line into four events only.

Notice that:
- the STORY BOARD = Events + Questions on cards
- the QUESTIONNAIRE = Question Analysis + Respondent's Data

Second, the explicit focus of the interview is on the questions and answers that the respondent had when facing problems in bureaucratic and course-related situation. The four events in each situation are only used as temporal or spatial referents that allow the respondent to concentrate on the behavior that occurred at a specific point in time and space.

Third, the items in the questionnaire (NOTE: QUESTIONS are in the RESPONDENT'S MIND, ITEMS are in the QUESTIONNAIRE) tap dimensions that are conceptually guided according to the conceptualizations presented above. You will notice that the emphasis is on description of the respondent's perception, respondent's movement through time and space and utility to the respondent throughout the questionnaire.

C. The Questionnaire

The questionnaire has been designed to tap an individual's perceptions and feelings about a specific process according to the conceptualization and time-line methodology presented above. The questionnaire itself has three major parts.

The effective use of the questionnaire requires a thorough familiarity with it by the interviewer. This cannot be obtained by a cursory read through but rather depends on REHEARSAL and MEMORIZATION of the sections and items. This does not mean that you have to have a word for word rendition, nor that you read each item as it is written down. It is necessary, however, for the interviewers to be so familiar with the instrument that they can devote their full attention to making the respondent comfortable and listening to what the respondent says. This is ONLY possible if the interviewer knows what's coming next without having to break his/her conversational style. It is also very important for reliability reasons that the interviewer carry out the interview exactly according to the structure of the questionnaire.

1. Respondent's Data Section

The Respondent's Data Section consists of two parts; the first part is the first page of the questionnaire and the second part is the conclusion on the last page of the questionnaire.

The first part is to record the respondent number and sex, and the interview schedule. The second part, the conclusion of the questionnaire contains standard demographic items and some items specific to this situation. Closing comments for the interview in general are also included as a script for the interviewer to follow.

Although both parts of the Respondent's Data section are physically attached to each other, the first part should be carried out in the beginning, while the second part should be asked last.

2. The Story Board Section

a. The Introduction

The introduction is designed to explain the purposes and procedures of the study to the respondent. A script is provided for the interviewer and prompts for actions that the interviewer must take are included. All PROMPTS are designated by being in capital letters. All emphasis is underlined. The introduction delimits all of the requests we will be making on the respondents in specific terms and moves the interview from establishing a rapport with the respondent, through a description of the study, through the collection of the time-line events and their corresponding questions. If the respondent has trouble understanding the four-event Story Board method, use the comic strip metaphor.

A Consent Statement is a part of the Introduction. It is needed for assuring the legal protection of the respondent, the University, the researchers and the interviewers.

In addition to the file card method for the Story Board, you may want to audio record the interview in order to assist you in getting accurate data. This is only an option. You MUST however, transcribe the tape onto questionnaire forms immediately after the interview while your memory is still fresh. This technique will help you to remember more data that you could not have recorded manually during the interview. Should you want to try this technique, the following script is for you to ask the respondent's permission.

Permission to record

To help both of us in this process, I would like, with
your permission, to record the interview. This is only so
I won't have to take as many notes while you are talking
and the interview can go quicker and more like a
conversation. I will use the tape only to help me
reconstruct our interview, afterward it will be erased.
At no time will your name or any other identifying
characteristic be attached to the tape. Would this be OK
with you?

Turn on the tape recorder as soon as you have permission to
record.

b. Story Board
In essence, this is the part when the respondent is asked
to focus his/her mind on a specific and recent bureaucratic
or academic problem which s/he experienced as a university
student. YOUR ASSIGNMENT FOR THE ORDER OF SITUATIONS WILL BE
ON THE TOP SHEET OF YOUR RESPONDENT DATA SECTION. In this
part you are to record the SITUATION itself, FOUR EVENTS
that the respondent uses to describe the situation, and all
QUESTIONS under each event in that particular situation as
related by the respondent.

3. Question Analysis Questionnaire
This section is the "essence" of the interview. The items
are designed to move from a description of what the question
represented to the respondent in terms of his/her movement
through the situation and the qualities of the question vis-
a-vis its answer (if indeed the respondent did get an
answer). The flow of this section is designed to move from
the combination of this question with its answer to the
answer itself.
This is done via distinct modes. One mode refers to the
respondent encountering or creating a gap and is emphasized
by the key words "IN YOUR MIND". This is emphasized so that
the respondent does not confuse posing the question in
his/her mind with any subsequent behavior (e.g., actually
asking the question out loud, or getting an answer).
Another mode emphasizes the connection of the question
with the event at which the question was initially posed.
This is emphasized with the phrase "AT THAT TIME". This is
because people frequently ask a question more than one time
during a particular situation and may not get an answer the
first time. Thus, they often have the same question later.
There is also intricate tracking of the answers to the
respondent's questions, whether they actually got an answer
or not. Such tracking requires careful attention by the
interviewer for the flow of the interview to make sense to
the respondent.

This section is the "expandable" portion of the questionnaire in that the interviewers will fill out one of these sections for EACH ONE of the questions elicited in the interview.

D. The Interview

1. General Issues

The interview will be conducted at a time and location that you have arranged with the respondent. You should arrive at the scheduled location on time - or in advance if possible to allow you to insure that the arrangement is suitable. You will need to meet in a place that is free from interruption and has a table. You should sit close enough to the respondent so that s/he can see that you are writing things down. You also need to be close enough so that you can both see the entire story board layout because this is an **essential** tool in the interview. It is very important that you write down as much information as possible on the cards during the interview process. Do not rely on recall or your tape recorder or your memory later on.

Maintain as much as eye contact with the respondent as you can. If the respondent seems confused by a word or concept, restate the item slowly. If the respondent still doesn't understand, or asks what a word means, say: "whatever (the word) means to you". DO NOT offer any possible interpretations or suggest meanings.

Keep a fairly rapid flow in order to focus the respondent on the questionnaire structure and avoid irrelevant conversation. Watch for cues from the respondent. You must control the direction and flow of the conversation. If you let the respondent ramble, it will waste your time and theirs. Further, if the respondent becomes bored/tired, we will not get quality data.

It is important to remain NEUTRAL as far as your own opinions and answers might be for all the items on the questionnaire. If a respondent asks if you agree with something said, say something like "I really want to know what YOU think about this item. There aren't any right or wrong answers and it is what YOU think that counts". In general you should emphasize slightly those dimensions of an item that need to be emphasized -IN YOUR MIND - AT THAT TIME.

If the respondent doesn't give you an answer, try repeating the item one more time. If the respondent says "don't know" they may be stalling for time to frame a response. Give them a little time and then re-read the item.

If you cannot get an answer, write N.A. (no answer) in the margin by the item. Continue with the next item.

If the respondent interrupts you before you finish reading an item, go back and read it through again from the beginning to make sure the respondent understands the item. When you don't understand something the respondent has said, say something like: "Could you clarify that for me please?" or "Could you be more specific, please?"

2. The Process
First, BE sure you have filled out the cover sheet. The RESPONDENT # is a two digit number represents the number of person that you are interviewing (01 - nn). Then, begin with the STORY BOARD section of the interview.

The Consent Statement is the first piece of business, and although you may see it as a mere formality, to the respondent it contains valuable information about the interview process and the study. Be sure that the respondent understands it clearly before you proceed.

Be sure to steer the respondent back to the structure of the questionnaire when s/he rambles out to the structure.

For the purposes of this study you will need blue and white 3x5 cards. The BLUE cards are used to record EVENTS and the WHITE cards are for recording QUESTIONS. Be sure to number each card immediately according to the scheme outlined in the questionnaire. Then arrange all the question cards so that they are ordered in time according to their corresponding event. Check your numbering logic according to the instructions.

For SCALE items (e.g., zero to six) make sure the respondent gives you a specific number for an answer. Do not settle for some ambiguous answer, try saying: "If you had to choose a number, which one would it be?"

Try to be as faithful as possible to the exact words of the respondent, e.g., try not to paraphrase answers given by the respondent.

III. General Concerns

A. The Pre-Test
You need to pre-test the questionnaire as a part of your study process. After the process, meet with your group to compare notes and come up with suggestions for improving the items on the questionnaire. For any revision you have done within your group, hand in a copy of the revised

questionnaire to Paulina Pannen, so that she can keep track of the development.

B. The Audio Recording

You are allowed to do an audio recording for the interview, both in the pre-test stage and in the actual data collection stage. Please notify Paulina Pannen if you decide to use audio recording for your study. Please NOTE that the audio recording is NOT a substitute for writing answers on the cards and questionnaire, but it is to be used to help you to remember things you forgot to note down during the interview and to share experience with other group members.

C. Miscellaneous

Check with me if you have ANY problem, questions, concerns. If your respondents want further information either before or after meeting with you tell them to feel free to contact Paulina Pannen at the Universitas Terbuka.

You may hand in your works, files, reports and records either being handwritten or typed, however, please make sure that your handwriting and typing are legible.

If you want any advice/help/etc. please contact:
- Paulina Pannen   021-7490941
  Perpustakaan Universitas   * 1208
  Terbuka
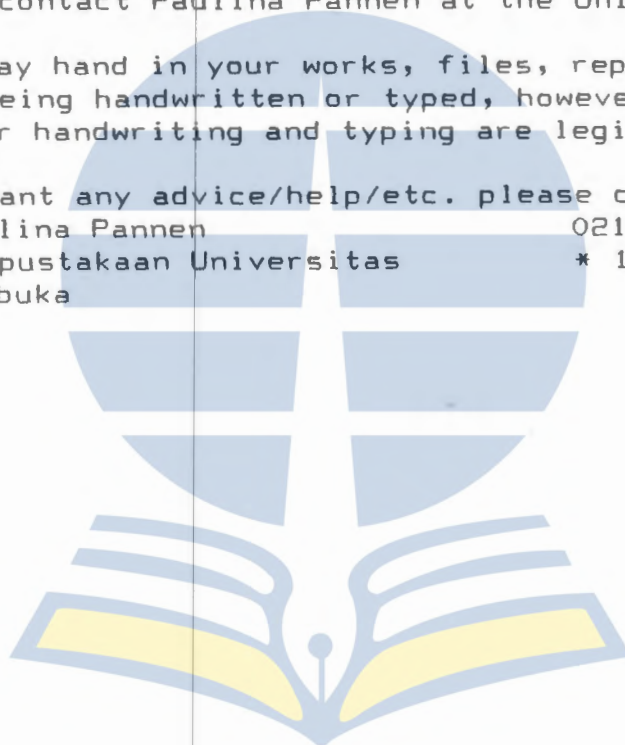
TELEPHONE GUIDELINE FOR THE INTERVIEWER

CALL R AT "BEST TIME TO CONTACT" AND FOLLOW THIS SCRIPT

> Hello, my name is ...YOUR NAME... from Universitas Terbuka
> and I'd like to speak with ...R NAME... concerning a study
> that we are conducting.

WHEN R COMES TO THE PHONE

> Hello, my name is ...YOUR NAME... from Universitas Terbuka
> We are conducting a study about how students look for
> information and use that information in their learning
> process. It will be very confidential and will not affect
> your status as a student of the Universitas Terbuka and your
> grade in any other way.

> Then, the procedures for the study involve your picking a
> problem that you have faced and is related to you as a
> student. In an interview format, we will discuss your
> problem, your questions about the problem, how you get
> information to answer your question and how you use that
> information to help you. The interview will take about one
> hour of your time. And we can meet anywhere where it is
> convenient to you.

> Now, at this point, do you have any question concerning the
> study?

ANSWER R'S QUESTIONS IF ANY, THEN CONTINUE

> Would you like to participate in our study?

IF NO, TERMINATE:
> Thank you for your time. Good bye.

IF YES, THEN
> Can we make an appointment for the interview?

RECORD TIME, DATE AND PLACE FOR INTERVIEW

> Thank you very much, I'll see you on ...TIME... at
> ...PLACE... If there is some reason why you can't make the
> appointment or if a new time would be more convenient,
> please call me at ...YOUR PHONE #... at ...YOUR AVAILABLE
> TIME... Thank you and good bye.

STORYBOARD

Introduction

> Thank you very much for allowing us to interview you. As I told you before, this study is aimed at looking at the information needs of students.

Consent Statement

> For the purpose of this study, your answers will be kept entirely confidential and no record of your name or any other identifying characteristic will be attached to your answers in any way. You are allowed to answer in any way you like, and your answers do not have any relation to your grade, your status as a student, administrative or academic punishment in any other way. Your answer will be kept for a maximum of two years, and Ms. Pannen and her research assistant will be the only individuals who have access to the data. You are free to stop, ask question and refuse to answer a question at any time, particularly to do so right now before we go on to the next phase.

AFTER THE RESPONDENT UNDERSTANDS, CONTINUE

Overview

> What I would like you to do is to focus on a recent situation or problem relating to your being a university student, in terms of (PICK ONE SITUATION AT A TIME):
> a [bureaucratic or academic] problem

IF BUREAUCRATIC:	......> IF ACADEMIC:
Your situation or problem can be anything from applying to the school, registering for a class, problem in selecting courses, arranging your schedule, paying your tuition, etc.	Your situation problem can be anything from difficulties in understanding a unit in your course, not knowing how to answer a problem given by your professor, etc.

THEN CONTINUE:

> We are interested in the questions you had as you experienced or lived through this situation, and that is what our questionnaire focuses on. The questionnaire is structured to guide how and when we ask you to remember different parts and different questions of your situation. The process may take an hour of your time.

Redundancy

It may seem at times like I have already touched upon an item, or that you responded to an item while answering an earlier one. Even if this is the case, my instructions are to ask you each item as it arises within the structure of the questionnaire. This is so that I can make sure I have accurately covered everything I need too in order to understand what you went through.

The Situation

Now we are going to begin the interview. I want to assure you that there are no right or wrong answers to the questions I will be asking. Now, what I want you to do is to choose a [bureaucratic or academic] situation that occurred recently. We are interested in what you did as you were facing that situation. I'll give you a moment to get that situation in mind.

File Card Method

What we are going to do, in essence, is have you tell me YOUR SITUATION and WHAT YOU DID in four events. By this I mean those things that you were involved with that led you to overcome your problem. This can include things that you did directly as well as thoughts and ideas that may have occurred at any point in the situation. An easy way for you to do this might be to think of your situation as a journey I will be taking with you, from the beginning; the first event, to the end; the fourth event, as if we are moving from one place to another, even if this place is just in your head .... and we are going to take pictures of those four events that happened. I'm going to let one of these file cards equal each one of the pictures and each time you tell me something that happened, I'll write down what you say on one of these cards from the first event until the fourth event. This four events will help me to understand what you went through and will also help you remember your questions at each stage in your situation. The essence of this process is to have you do some in depth thinking about these questions.

IF RESPONDENT HAS TROUBLE UNDERSTANDING:

Another way to look at this is like a comic strip. A comic strip usually has four boxes, and you can understand what Snoopy (OR OTHER COMIC FIGURES) is doing

from the four different pictures of events in a
particular situation. You are to do the same as to tell
me four events of what you did in your particular
situation. I'll write down what you say on these cards.
Then, we finally can get a picture of your situation in
four events, just like in a comic strip.

SHOW THE RESPONDENT COLOR CARDS AND THE CHART CARD LAYOUT
BELOW

```
-----------------------------------------------------------------
| Events    -----        -----        -----        -----       |
|          |  1|-------|  2|-------|  3|------->|  4|           |
|           -----        -----        -----        -----       |
|                                                              |
| Questions                                                    |
|           -----        -----        -----        -----       |
|          |1.1|        |2.1|        |3.1|        |4.1|         |
|           -----        -----        |             |          |
|          |1.2|        |2.2|        |             |          |
|           -----        |            |             |          |
|          |1.3|        |            |             |          |
|           -----        |            |             -----      |
|          |1.n|..............................|4,n|          |
|           -----                                  -----       |
-----------------------------------------------------------------
```

To start, let's think about YOUR SITUATION. Tell me about
it.

Now, think back to the very first thing that YOU DID in
this situation. What was it?

RECORD FIRST EVENT ON A BLUE CARD AND NUMBER IT

   Tell me, what happened next?

RECORD SECOND EVENT ON A BLUE CARD AND NUMBER IT

PROBE   What happened next?   Anything else?

CONTINUE UNTIL ALL FOUR EVENTS ARE RECORDED ON BLUE CARDS

IF RESPONDENT HAS DIFFICULTY IN PUTTING THE SITUATION INTO FOUR EVENTS:

Tell me, what happened first?

Then, what happened last?

Now, can you tell me two things that happened in the middle?

Questions

Now pretend that you are back when ....

READ FIRST EVENT AND PUT THE CARD IN FRONT OF RESPONDENT

Focusing right there, go back to that moment in YOUR MIND. What I want is a list of questions that you had then. By questions I means things that you wanted to find out about, learn about, come to understand, make sense out of. What we are really interested in are the questions you had at each step of your problem. It's important for you to understand that you didn't have to ask the question out loud, and didn't have to have received an answer. Sometimes you may not even have thought about them as questions, but rather, simply as unclear aspects of your thinking about the problem. In these cases what I need you to do is to turn these points into questions, or translate them into questions.

Example:

Let me give you an example. I want to go to on a trip to Vancouver, Canada. That is my photograph. My questions might be: what is the cheapest flight to Vancouver? How much money do I need to save for that trip? Where I will stay in Vancouver? How can I get city map of Vancouver? What are the point of interests in Vancouver?

Now let's look at your event .... READ EVENT

Think back, what questions did you have in YOUR MIND at this point in time?

RECORD QUESTIONS ON WHITE CARDS
        AND NUMBER THEM ....until 4.n

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---------
```
PROBE   Any more questions?
```
---------
```

Now let's look at the next event ....READ EVENT

Thinking back to THIS POINT IN TIME, tell me what
questions did you have?

RECORD QUESTIONS ON WHITE CARDS AND NUMBER THEM

```
---------
```
PROBE   Any more questions?
```
---------
```

CONTINUE WITH THIS PROCESS UNTIL ALL QUESTIONS HAVE BEEN
RECORDED ON WHITE CARDS AND NUMBERED

Situation Review

Now that we have these verbal pictures or photographs of
your problem laid out, I'd like you to think about all
the questions to see if you'd like to add anything. You
can do this now, or if as we proceed you think of
anything we can add it then.

Question Analysis

I want you to think deeply about what happened and what
you thought, and share as much of your thinking as you
can. As we are going through the process of the
questionnaire, there may be times when you need a few
minutes to think. Please feel free to do so, or let
me know if you don't understand one of my questions so
that I won't disturb your thinking. If at any time you
feel that something you said earlier fits at this moment,
tell me.

We'll start with this first question

COMPLETE ONE QUESTION ANALYSIS SECTION FOR EACH QUESTION
FOR AN IN-DEPTH ANALYSIS OF EACH.

281

SITUATION TYPE: (circle one)   Bureaucratic   Academic

R # _____   E # _____   Q # _____
==

QUESTION ANALYSIS SECTION

The question we are focusing on here is

READ THE QUESTION AND GIVE THE CARD TO THE RESPONDENT

1. HOW EXPECTED HELP
        I'd like you to think back to when you had this
        question IN YOUR MIND. How did you expect getting
        an answer AT THAT TIME would help you?

        ----

2. ANSWERS TO THE QUESTION

   Did you EVER get an answer to this question ?

           NO... (Go to 3)   YES...
              ¦   ¦---------
              v   v   ¦
3. Did you actively try to get an   AT THAT POINT ¦
   answer to this question?   (Go to 7)   v
                                                      ¦   Later...
NO...   YES...   ¦   When?
Why? _____   ¦   ¦
                                     ¦   ¦   --------
----------------------------------   ¦   ¦   (REFER TO
                                     v   ¦   EVENTS'
   ¦ 4. What did you try that didn't seem to   ¦   CARDS,
   ¦   work?_____   ¦   THEN
   ¦   _____   ¦   RECORD THE
   ¦   ¦   NUMBER OF
   ¦ 5. Using our scale of zero to six, how   ¦   SELECTED
   ¦   much effort would you say you spent   ¦   EVENT)
   ¦   to get an answer?   ¦   ¦
   ¦   ¦   ¦
   ¦   0---1---2---3---4---5---6   ¦   OR
   ¦   low   high   ¦   ¦
   v   ¦   After the
6. Using our scale of zero to six, how   ¦   problem was
   IMPORTANT was it to you to get an   ¦   over?_____
   answer to this question?   ¦   (Go to 7)
                                                    ¦   v
        0---1---2---3---4---5---6   ¦   ¦
   not important   very important   ¦   ¦
                                                    ¦   ¦
   (STOP HERE, GO TO THE NEXT QUESTION)   v   v

7. What was the answer? _____
_____

8. What was the source of this answer? _____
_____

9. When people get answers sometimes they are satisfied and
   other times they feel like something is missing. Was the
   answer you got complete or partial?

   Partial ....   Complete ....
       ¦   ¦
       v   v
10. Why do you think it was partial/complete? _____
_____

11. Did the answer to this question help you in the way you
    expected it to, or in any other way?

    Didn't help ...   Yes, but not in the   Yes...
        ¦   expected way ...   ¦
        v   v   v
12. How did it not help?   Go to 13   Go to 14
                                     ¦   ¦
_____   ¦   ¦
                                     ¦   ¦
_____   ¦   ¦
    ¦   v   ¦
    ¦   13. In what way did it help that was not expected? ¦
    ¦   _____   ¦
    ¦   ¦
    ¦   _____ ¦
    ¦   v
    ¦   14. In what other ways did the answer help?
    ¦   _____
    ¦   _____
    v   v   v
15. Did you actively try to get an answer to this question?

    NO ... Why? _____   YES ...
                                                    ¦
_____   ¦
(Go to 19)   ¦
    ¦   v
    ¦   16. What did you try that seem to work? What was
    ¦   helpful in getting an answer?
    ¦   _____
    v
    ¦   17. What did you try that didn't seem to work?
    v   _____
    ¦

18. Using our scale of zero to six, how much effort
     would you say you spent to get an answer to
     this question?

```
              0----1----2----3----4----5----6
              low                         high
```

19. Using our scale of zero to six, how IMPORTANT was it to
    you to get an answer to this question?

```
         0----1----2----3----4----5----6
```

not important   very important

(STOP HERE, THEN GO ON TO THE NEXT QUESTION)

RESPONDENT # ......

==

Respondent's phone number: ....

Interview set for: ....

Interview to take place at: ....
                           ....
                           ....
                           ....

FIELDING INFORMATION

Time interview started: ....

Time interview ended: ....

Total length of interview (in minutes)..............

Date of interview: ....

Interviewer: ....

```
----------------------------------------
! SEX of respondent              !
!                                !
! .... Male      .... Female     !
!                                !
----------------------------------------
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RESPONDENT # ....

CONCLUDING SECTION

That was a long process and I want to thank you for your patience and assistance. I have left just a few general questions and some questions about yourself that I need to ask.

20. Your age: ....

21. Your status as a student:
    .... a. full time student
    .... b. part time student

22. Your source of funds for school:
    .... a. savings
    .... b. work

            a. where do you work?
            - public/government agency : ....
            - private company : ....
            - other (specify): ....

            b. your job title/rank ....

    .... c. parents
    .... d. workstudy
    .... e. scholarships
    .... f. grant
    .... g. other (specify):.................

23. How many credits have you earned thus far? ....

24. How many years of post high school education your have attained thus far?
    .... a. 1 year   .... d. 4 years
    .... b. 2 years   .... e. 5 years
    .... c. 3 years   .... f. other (specify):.......

25. What was your total family income last year?
    .... a. under $15,000
    .... b. $15,000 - $30,000
    .... c. $30,000 - $50,000
    .... d. $50,000 - $75,000
    .... e. above $75,000
    .... f. refused/don't know
    .... g. not applicable

Again, I'd like to thank you very much for your assistance. Your answers will be very helpful to us and we appreciate your help. THANK YOU !!!

VARIABLES - ITEMS MATRIX

VARIABLES	STORYBOARD EVENTS	QUESTIONS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
SITUATION	X																										
GAPS		X																									
INFORMATION																											
– Answered/Not				X																							
– What							X																				
– Partial/Complete										X	X																
FROM WHERE																											
– Source									X																		
HOW																											
– Activeness					X												X										
– Effort expended							X														X						
– Perceived Importance								X														X					
– Strategies/worked																		X									
– Strategies/not worked						X													X								
WHEN																											
– Now					X																						
– Later					X																						
– After					X																						
USE																											
– Expected help			X																								
– Actual Help													X		X												
– Additional help(s)													X		X	X											
– Did not help													X	X													
DEMOGRAPHIC DATA																											
– Age																							X				
– Status as student																								X			
– Source of funds																									X		
– Cummulative credits																										X	
– Education experience																										X	
– Family income																											X
– Gender (in R data sheet)																											

INFORMATION SEEKING AND USE BEHAVIORS

PETUNJUK WAWANCARA

I. Tujuan Penelitian

Penelitian ini bertujuan untuk mencari perbedaan dan persamaan pola perilaku informasi mahasiswa UT dan non-UT. Perilaku informasi dalam hal ini terdiri dari dua kegiatan, yaitu mencari informasi dan menggunakan informasi. Informasi dalam penelitian ini diklasifikasikan menjadi dua, yaitu informasi administratif (birokratif) dan informasi akademis yang berkaitan dengan masalah isi/materi pelajaran.

Hasil penelitian ini diharapkan akan berguna untuk menentukan perbedaan dan persamaan jasa informasi yang harus disediakan untuk mahasiswa UT dan non-UT. Berdasarkan hasil penelitian ini dapat dibuat acuan kerja untuk merancang jasa informasi yang dapat memenuhi kebutuhan informasi bagi mahasiswa UT dan non-UT.

II. Metode Penelitian

TIME-LINE INTERVIEW

a. Konsep umum

Time-line interview adalah satu teknik untuk mewawancara respondent yang akan digunakan dalam penelitian ini. Teknik ini memungkinkan respondent untuk menceritakan kejadian yang pernah dialaminya sebagaimana dia mengalami dan merasakan kejadian tsb., tanpa ada pengaruh apapun dari pewawancara. Dalam teknik ini setiap kejadian yang dialami respondent adalah unik, dan hanya respondent yang tahu/mengerti apa yang terjadi (S/he was the only one there and s/he was the only one who experienced that situation)

Proses menceritakan kembali kejadian yang pernah dialami oleh respondent diatur sedemikian rupa dalam struktur yang disebut storyboard dan questionnaire untuk menganalisa pertanyaan. Dalam proses ini, ada beberapa hal yang perlu diingat oleh pewawancara.

1. Respondent

Pada umumnya, respondent akan merasa senang jika ada seseorang yang mau memperhatikan dan mendengarkan (menyimak)

permasalahan, keluhan dan kejadian yang pernah dialaminya.
Untuk hal ini dapat terjadi, respondent harus menaruh
kepercayaan yang penuh terhadap pewawancara secara pribadi
maupun secara umum (bahwa informasi yang diberikan akan
bersifat rahasia dan tidak akan mempengaruhi status sosial
and akademis respondent). Oleh sebab itu, binalah hubungan
yang baik antara pewawancara dan respondent sejak awal
pertemuan, tunjukkan bahwa pewawancara memang benar-benar
ingin memperhatikan dan mendengarkan permasalahan
respondent. Tuntun respondent untuk menceritakan
pengalamannya dalam struktur storyboard: 4 urutan/rangkaian
kejadian. Pandu respondent agar tidak bercerita panjang
lebar yang tidak ada hubungannya dengan tujuan penelitian
ini.

2. Pewawancara
    - Pewawancara harus menguasai, mengerti dan memahami
    teknik wawancara ini dan instrument yang digunakan dalam
    wawancara ini. Jika mungkin, pewawancara dipersilahkan
    untuk menghafalkan instrument dan jalannya wawancara.
    Dengan demikian pewawancara akan dapat mengantisipasi
    permasalahan dan dengan mudah mengatasi permasalahan yang
    mungkin timbul dalam proses wawancara.

    - Pewawancara mempunyai kewajiban untuk membantu
    respondent bercerita tentang pengalamannya dalam
    persepsinya dan dengan caranya sendiri. Jangan mengganti
    ungkapan-ungkapan yang digunakan oleh respondent dalam
    menceritakan pengalamannya. Jangan mempengaruhi
    respondent dengan ucapan-ucapan atau bahasa tubuh yang
    dapat berarti negative atau positive. Jangan memberikan
    persepsi Anda kepada respondent. Tapi pewawancara harus
    membantu memberikan stimulus terhadap respondent jika
    respondent mengalami kesukaran dalam mengingat kembali
    permasalahan yang pernah dialaminya.

    - Pewawancara mempunyai kewajiban untuk membiarkan
    respondent bercerita dan mendengarkan cerita respondent
    dengan seksama.

    Time-line interview dalam penelitian ini digunakan untuk
mengungkapkan kembali pengalaman seseorang sejalan dengan
perilaku dan persepsi seseorang tsb. ketika mengalami
kejadian tsb. Struktur STORYBOARD digunakan sebagai peta
kognitif, penunjuk bagi respondent untuk menceritakan
kembali pengalamannya dalam 4 rangkaian kejadian dan
pertanyaan-pertanyaan yang ada dalam pikirannya ketika
mengalami kejadian tsb. STORYBOARD juga digunakan sebagai
pemandu agar respondent tidak bercerita diluar jalur
wawancara.

b. Instrument penelitian

Seperti telah diungkapkan terdahulu, metode yang akan digunakan dalam penelitian ini adalah Time-Line interview. Kemudian, instrument yang akan digunakan dalam penelitian ini adalah storyboard dan questionnaire.

Ingat bahwa:

STORYBOARD = 4 rangkaian kejadian/event dan pertanyaan-pertanyaan yang harus dicatat dalam kartu.

QUESTIONNAIRE = Analisa pertanyaan dan data respondent.

STORYBOARD

Perkenalkan diri Anda kepada responden. Jelaskan pula judul dan tujuan penelitian ini. Skrip untuk storyboard sudah disediakan. Ingat bahwa semua INSTRUKSI ditulis dengan huruf besar, sedangkan semua emphasis/penekanan ditulis dengan garis bawah. Jelaskan jalan wawancara kepada respondent, termasuk penggunaan storyboard (gunakan metafor komik untuk memperjelas, jika perlu).

Jika terlalu sukar untuk Anda mencatat semuanya, Anda boleh merekam wawancara. Ingat bahwa rekaman bukan pengganti catatan! Jadi, walaupun Anda menggunakan recorder, bukan berarti Anda tidak perlu mencatat. Sumber data utama bagi peneliti adalah apa yang Anda catat dalam kartu dan formulir yang telah disediakan, bukan apa yang Anda rekam! Jika Anda menggunakan rekaman, mohon ijin kepada respondent, apakah ia tidak keberatan jika wawancaranya direkam. Kemudian, adalah kewajiban Anda untuk mentranskripkan rekaman Anda ke dalam bentuk kartu dan formulir yang telah disediakan. Lakukan transkrip Anda sesegera mungkin, langsung setelah wawancara selesai, selagi ingatan Anda akan wawancara tsb. masih "fresh".

Setiap responden diharapkan bercerita 2 kali tentang 2 peristiwa/kejadian/permasalahan yang dialaminya. Satu tentang permasalahan akademis dan satu lagi tentang permasalahan administratif/birokratif. Pewawancara harus ingat bahwa respondent dan wawancara hanya berfokus pada satu permasalahan saja pada satu saat (one situation at a time). Sehingga, akan ada 2 proses wawancara yang berurutan untuk setiap respondent. Pewawancara harus membujuk dan menjelaskan bahwa seluruh proses wawancara untuk satu respondent kira-kira 2 jam (1 jam untuk setiap situasi).

Dengarkan dengan seksama permasalahan respondent. Kemudian gunakan 4 rangkaian kejadian (4 EVENTS) sebagai peta temporal atau spatial yang berguna untuk membantu

respodent bercerita secara sistematik dan berkonsentrasi pada permasalahan yang dialaminya pada saat tertentu. Catat permasalahan respondent dalam 4 urutan kejadian dalam kartu yang telah disediakan.

Setelah 4 rangkaian kejadian dicatat semua, pandu respondent agar mengingat kembali pertanyaan-pertanyaan yang ada dalam pikirannya ketika respondent mengalami setiap kejadian (4 kejadian). Catat semua pertanyaan yang dikemukakan oleh respondent dalam kartu yang telah disediakan. Ada kemungkinan pertanyaan yang sama akan diulang-ulang dalam beberapa kejadian. Biarkan hal ini terjadi.

Setelah semua pertanyaan dicatat, mulailah analisa pertanyaan. Pusatkan wawancara pada PERTANYAAN dan JAWABAN (serta beberapa atribut jawaban) atas pertanyaan yang dimiliki respondent dalam pikirannya pada saat ia mengalami permasalahan yang diceritakannya.

Ingat bahwa PERTANYAAN ada dalam pikiran respondent, sedangkan ITEM ada dalam questionnaire. Item dalam questionnaire berguna untuk memandu respondent dalam menceritakan kembali pengalamannya secara cermat dan ter-struktur. Item dalam questionnaire dirancang sedemikian rupa untuk mendapatkan informasi tentang persepsi dan perasaan/pendapat respondent dalam suatu proses kejadian yang unik.

Efektifitas wawancara ini akan tercapai jika respondent dapat menceritakan kembali kejadian/permasalahan yang pernah dialaminya dan jika pewawancara dapat menyimak dengan seksama terhadap cerita respondent. Oleh sebab itu, cobalah hafalkan jalur dan struktur wawancara, agar perhatian pewawancara dapat terpusat penuh kepada cerita respondent daripada kepada urutan item dalam instrumen.

Satu hal lagi yang sangat penting dan perlu diingat adalah masalah penomoran. Jika pewawancara tidak memberi nomor yang sistematik dalam formulir data respondent, kartu events, kartu pertanyaan dan formulir analisa pertanyaan, maka peneliti tidak akan mendapatkan data yang baik. Oleh sebab itu, pewawancara harus selalu ingat aturan penomoran yang akan dijelaskan oleh peneliti.

QUESTIONNAIRE

Analisa pertanyaan adalah inti dari seluruh proses wawancara. Analisa pertanyaan akan meneliti apakah respondent pernah mendapatkan jawaban atas setiap pertanyaan yang dimilikinya, bagaimana cara respondent

mendapatkan/mencari jawaban, dan beberapa atribut lain.

Ingat, selalu tekankan "DALAM PIKIRAN ANDA" kepada respondent, karena yang ingin diketahui adalah persepsi respondent. Jangan memberikan persepsi atau contoh persepsi Anda kepada respondent. Penekanan ini juga perlu agar respondent tidak hanya menyebutkan pertanyaan yang pernah diucapkan dan ditanyakan kepada orang lain, karena yang ingin diketahui adalah semua pertanyaan, baik yang pernah diucapkan kepada orang lain, ataupun yang hanya disimpan dalam hati saja.

Dalam segala hal, juga tekankan "PADA SAAT ITU" yaitu pada saat kejadian tsb. dialami oleh respondent, bukan sebulan sebelumnya, atau setahun kemudian atau sekarang.

Lakukan analisa pertanyaan sampai seluruh pertanyaan dalam satu situasi sudah dianalisa. Kemudian ulang seluruh proses untuk situasi berikutnya (yang satu lagi) dari storyboard sampai analisa seluruh pertanyaan dalam situasi tsb.

III. Proses Wawancara

a. Secara umum

Wawancara akan diadakan pada hari, tanggal, dan tempat yang telah ditentukan, sesuai dengan kesediaan respondent. Harap diingat kemungkinan adanya proses wawancara yang dimulai jam 19.00 sampai jam 22.00. Pewawancara diharap bersiap-siap untuk menghadapi kemungkinan tersebut.

Pewawancara diharapkan selalu datang tepat pada waktunya di tempat wawancara, dan mengakhiri wawancara tepat pada waktunya (oleh sebab itu pewawancara harus bisa memandu respondent agar tidak berbicara terlalu bertele-tele). Pewawancara juga diharapkan membina hubungan baik dengan respondent dan membina kepercayaan respondent terhadap pewawancara sejak awal pertemuan. Duduklah yang cukup dekat dengan respondent agar mudah bagi pewawancara untuk memperlihatkan kartu-kartu, storyboard, dll. kepada respondent.

Jika respondent bertanya "apa artinya ...?". Jawablah: "sebagaimana Anda mengartikannya". Pewawancara tidak diharapkan untuk menawarkan atau memberikan interpretasi kepada respondent.

Walaupun respondent diijinkan bercerita dan pewawancara wajib mendengarkannya, namun kontrol akan jalannya wawancara tetap ada pada pewawancara. Jadi pewawancara harus bisa memberikan kebebasan bercerita kepada respondent, tapi juga

tetap menjaga jalur dan waktu wawancara, sehingga semua dapat selesai pada waktunya.

Pewawancara diharapkan berusaha sedemikian rupa agar respondent tidak bosan atau mengantuk selama proses wawancara. Hal ini sangat penting mengingat banyak sekali pengulangan-pengulangan yang harus dilakukan selama proses wawancara tsb.

Beri waktu yang cukup bagi respondent untuk memikirkan informasi yang diperlukan. Jika pewawancara belum/tidak mengerti jawaban respondent, bertanyalah kepada respondent, dan mohon respondent untuk menjelaskan sekali lagi apa yang dimaksud.

b. Secara khusus

1. Isilah lembaran pertama dengan benar. Perhatikan penomoran, gunakan aturan penomoran yang telah ditentukan.

2. Bersikaplah ramah untuk menjelaskan kata pengantar, overview dll.

3. Mulailah dengarkan cerita respondent, kemudian segera gunakan storyboard untuk mencatat 4 rangkaian kejadian cerita respondent.

4. Kartu berwarna adalah untuk mencatat semua kejadian/event dalam setiap situasi. Kartu putih yang telah disediakan adalah untuk mencatat semua pertanyaan dari setiap kejadian dan situasi. Beri nomor semua kartu dengan baik dan benar.

5. Setelah semua event dan pertanyaan dicatat, mulailah dengan proses analisa pertanyaan untuk setiap pertanyaan.

6. Kemudian, isilah halaman terakhir dari questionnaire yaitu data respondent.

7. Ulang proses wawancara mulai dari cerita respondent tentang situasi yang dialami, story board dan 4 events, pertanyaan-pertanyaan dalam setiap event, untuk situasi yang berikut. Ingat bahwa setiap respondent harus menceritakan dua situasi yaitu akademis dan birokratis.

8. Untuk item yang menggunakan skala, respondent harus memilih salah satu ukuran dalam skala, tidak boleh hanya kira-kira. Pewawancara harus memaksa respondent untuk memilih salah satu angka dalam skala.

9. Jangan mem-"paraphrase" jawaban/keterangan respondent.

10. Sebelum wawancara yang sesungguhnya dimulai, pewawancara wajib untuk mempretest dan memperagakan proses wawancara ini dengan teman, kolega, atau mahasiswanya.

11. Laporkan permasalahan yang timbul baik dalam pretest maupun dalam proses wawancara yang sesungguhnya kepada peneliti, agar dapat didiskusikan baik secara individu maupun secara kelompok.

STORYBOARD

<u>Pengantar</u>

1. Nama saya adalah ...., tenaga edukatif dari Universitas
   Terbuka. Kami sedang mengadakan penelitian tentang
   perilaku informasi mahasiswa perguruan tinggi di
   Indonesia. Hasil penelitian ini pertama akan dijadikan
   disertasi doktor untuk Dra. Paulina Pannen di Amerika
   Serikat, dan kedua akan dijadikan kerangka acuan kerja
   bagi pimpinan Universitas Terbuka dalam menyediakan jasa
   informasi bagi mahasiswanya.

2. Yang kami harapkan dari Anda adalah kesediaan Anda untuk
   bercerita tentang kejadian/permasalahan yang pernah
   terjadi selama Anda menjadi mahasiswa. Pengalaman Anda
   tsb. akan kita kaji bersama dalam bentuk wawancara dengan
   pertanyaan-pertanyaan yang sudah kami siapkan. Wawancara
   ini akan berlangsung kira-kira dua jam.

3. Ucapkan terima kasih atas kesediaan respondent untuk
   diwawancara.

<u>Ijin Wawancara</u>
   Dalam proyek penelitian ini, informasi dan jawaban yang
   Anda berikan akan kami rahasiakan. Nama atau identifikasi
   Anda tidak akan digunakan dalam pelaporan hasil
   penelitian ini nanti. Informasi dan jawaban yang Anda
   berikan tidak akan berpengaruh terhadap nilai, indeks
   prestasi, status Anda sebagai mahasiswa, hubungan Anda
   dengan universitas baik secara akademis maupun
   birokratif. Hanya Dra. Paulina Pannen saja yang berhak
   membaca dan mengolah jawaban Anda untuk digunakan sebagai
   bahan dissertasinya.

   Apakah sekarang Anda siap?

JIKA R SUDAH MENGERTI DAN SIAP, LANJUTKAN.

<u>Overview</u>
   Pada dasarnya kami ingin mendengar permasalahan yang
   pernah Anda alami selama Anda menjadi mahasiswa di
   universitas INI (Universitas Terbuka, Universitas
   Indonesia, atau Universitas Hasannuddin). Coba renungkan
   kembali masalah yang baru-baru ini Anda alami dalam
   interaksi/hubungan Anda sebagai mahasiswa dengan
   universitas Anda.

Masalah Anda dapat berbentuk: (PILIH SALAH SATU)

masalah akademis   atau   **masalah birokratif**

<u>masalah akademis</u>, seperti kesukaran untuk membaca/mengerti
    salah satu bab/bagian dari mata kuliah Anda, kesukaran
    dalam mengerjakan perkerjaan rumah, makalah dan latihan-
    latihan, kesukaran dalam menjawab pertanyaan dosen,
    tutorial, dan ujian, dll.

<u>masalah birokratif</u>, seperti kesukaran dalam memahami
    peraturan registrasi, kesukaran memahami buku panduan,
    kesukaran dalam mengartikan peraturan/tata cara daftar
    mata kuliah, kesukaran dalam memilih mata kuliah,
    kesukaran membeli bahan belajar, kesukaran dalam mengurus
    beasiswa (Supersemar, TID, KMI), cuti akademik, dll.

SELANJUTNYA....

    Sekali lagi, yang ingin kami ketahui adalah <u>permasalahan
yang Anda alami dan pertanyaan-pertanyaan yang timbul dalam
pikiran Anda ketika Anda mengalami permasalahan tsb.</u>

    Proses wawancara ini mungkin akan memakan waktu yang agak
lama dan banyak sekali pertanyaan yang mungkin seperti
diulang-ulang. Tapi, kami mohon kesabaran dan bantuan Anda,
karena memang itulah yang ingin kami ketahui dan kami cari.
Kami harap Anda menjadi maklum adanya.

    Perlu Anda ketahui, dalam wawancara ini tidak ada jawaban
yang benar atau salah. Kami hanya ingin mengetahui
permasalahan yang Anda alami dan bagaimana perasaan/pendapat
Anda, karena permasalahan tsb. unik, bukan jawaban yang
benar atau salah.

    Sekarang, coba Anda renungkan kembali permasalahan
AKADEMIS atau BIROKRATIF (PILIH SALAH SATU) dan
menceritakannya dalam 4 rangkaian kejadian.

JIKA R BELUM MENGERTI:

    Anda tentu ingat cerita komik! Jika Anda ingat, dalam 4
urutan gambar komik, Anda dapat mengerti apa yang terjadi
pada si Gareng misalnya.

    Pertama, Gareng makan pisang di pinggir jalan.

    Kedua, Gareng membuang kulit pisang sembarangan, lalu
pergi.

    Ketiga, Gareng berjalan kembali ke tempat ia membuang
kulit pisang tanpa berhati-hati.

    Keempat, Gareng menginjak kulit pisang dan jatuh.

Kami harap Anda sekarang dapat menceritakan masalah
akademis/ birokratif Anda dalam 4 rangkaian kejadian seperti
cerita Gareng tsb.

PERLIHATKAN SUSUNAN KARTU BIRU DAN GAMBAR DI BAWAH INI UNTUK
MEMPERMUDAH RESPONDENT UNTUK MENGERTI
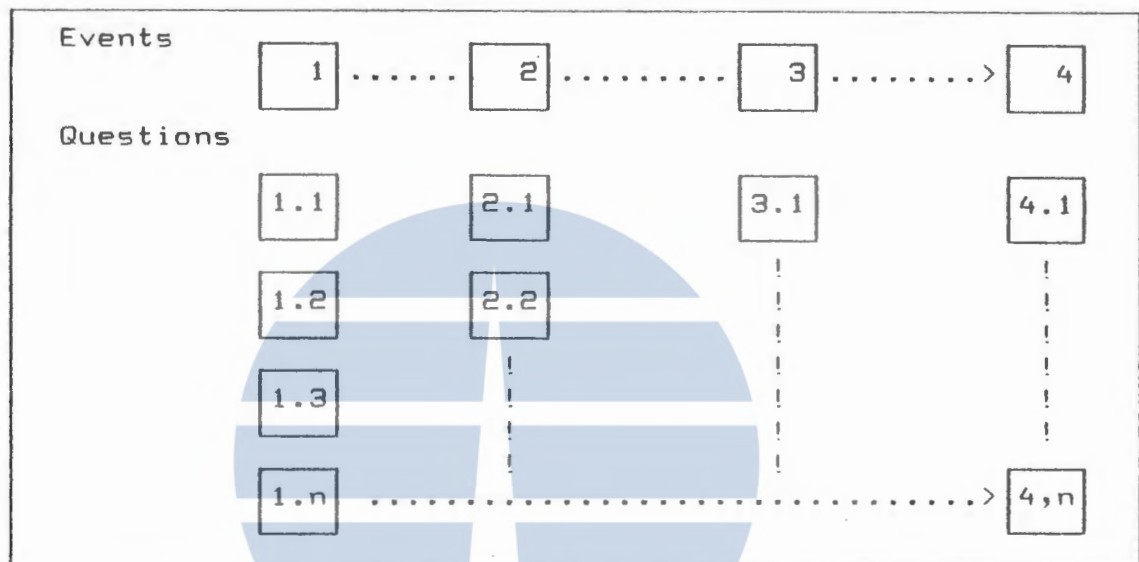
Sekarang, dapatkah Anda menceritakan kepada kami
permasalahan akademis/birokratif yang pernah Anda alami
baru-baru ini, dan apa yang Anda lakukan (atau: apa yang
terjadi) ketika Anda mengalami permasalahan tsb. dalam 4
rangkaian kejadian?

Sekarang, coba ceritakan permasalahan Anda.

SIMAK PERMASALAHAN R DENGAN TELITI.

Kemudian, apa yang terjadi atau Anda lakukan pertama?

CATAT KEJADIAN INI (EVENT) DALAM KARTU BIRU DAN BERI NOMOR.

Apa yang terjadi atau Anda lakukan berikutnya?

CATAT KEJADIAN INI (EVENT) DALAM KARTU BIRU DAN BERI NOMOR
SAMPAI KEJADIAN KEEMPAT.

APABILA R KESUKARAN:

Coba ceritakan apa yang terjadi atau Anda lakukan
pertama?

Kemudian, apa yang terjadi atau Anda lakukan terkahir?

Sekarang, apa yang terjadi atau Anda lakukan ditengah-
tengah ini? (kedua dan ketiga)

CATAT SEMUA URUTAN KEJADIAN (EVENT) DALAM KARTU BIRU DAN
BERI NOMOR SAMPAI KEJADIAN KEEMPAT.

Baiklah, sekarang coba Anda renungkan kejadian pertama.

BACAKAN KEJADIAN PERTAMA DARI KARTU BIRU.

Ketika Anda mengalami kejadian pertama atau melakukan hal
pertama ini, pertanyaan apa saja yang timbul dalam pikiran
Anda? Apa saja yang ingin Anda ketahui, apa yang ingin Anda
coba untuk mengerti, apa yang Anda ingin coba untuk
memahami?

Maksud kami, bukan hanya pertanyaan yang Anda tanyakan
kepada seseorang, tapi juga pertanyaan yang Anda simpan saja
didalam hati Anda.

Misalnya, kejadian yang pertama dalam permasalahan saya
adalah: saya ingin pergi berlibur ke Bali. Pada saat itu,
pertanyaan yang timbul dalam pikiran saya adalah:
Bagaimana saya bisa sampai ke Bali? Berapa biaya
perjalanan ke Bali? Berapa banyak uang saku yang perlu
saya bawa? Berapa hari saya perlu tinggal di Bali? Di
mana saya harus menginap? Apa saja yang saya bisa lihat
dan lakukan selama di Bali?

Sekarang, Anda renungkan kembali kejadian pertama ini.
Pertanyaan apa saja yang ada dalam pikiran Anda pada saat
ini?

CATAT PERTANYAAN DI KARTU PUTIH

Masih ada lagi? Masih ada pertanyaan lagi?

CATAT SEMUA PERTANYAAN DI KARTU PUTIH

BACA KEJADIAN BERIKUTNYA

Kemudian, Anda renungkan kembali kejadian kedua ini.

Pertanyaan apa yang ada dalam pikiran Anda pada saat itu?

CATAT PERTANYAAN DI KARTU PUTIH

Masih ada lagi? Masih ada pertanyaan lagi?

BACA KEJADIAN BERIKUTNYA

Kemudian, Anda renungkan kembali kejadian ketiga ini.

Pertanyaan apa yang ada dalam pikiran Anda pada saat itu?

CATAT PERTANYAAN DI KARTU PUTIH

Masih ada lagi? Masih ada pertanyaan lagi?

BACA KEJADIAN BERIKUTNYA

Kemudian, Anda renungkan kembali kejadian keempat ini.

Pertanyaan apa yang ada dalam pikiran Anda pada saat itu?

CATAT PERTANYAAN DI KARTU PUTIH

Masih ada lagi? Masih ada pertanyaan lagi?

SELESAIKAN PROSEDUR INI .... SAMPAI KE KEJADIAN KEEMPAT DAN SAMPAI SEMUA PERTANYAAN SUDAH TERCATAT DI KARTU PUTIH.

Baiklah, sekarang, masih ada lagi yang perlu diskusikan, yaitu menganalisa pertanyaan-pertanyaan ini. Mari kita mulai sekarang.

MULAI "ANALISA PERTANYAAN" UNTUK SETIAP PERTANYAAN.

MASING-MASING PERTANYAAN HARUS DIANALISA

SITUASI (lingkari salah satu):   Akademis   Administratif

R # _____   E # _____   Q # _____
===

ANALISA PERTANYAAN

Pertanyaan yang akan kita diskusikan sekarang adalah:

_____
(BACA PERTANYAAN DARI KARTU PUTIH DAN PERLIHATKAN KEPADA R)

1. BANTUAN/PERTOLONGAN YANG DIHARAPKAN
   Renungkan kembali pada saat timbul pertanyaan ini DALAM
PIKIRAN ANDA. Seandainya Anda mendapat jawaban atas pertanyaan
Anda PADA SAAT ITU, apakah jawaban yang Anda peroleh dapat
membantu/menolong Anda? Bagaimana jawaban tsb. membantu Anda?

_____

_____

2. JAWABAN ATAS PERTANYAAN
   Apakah Anda pernah mendapatkan jawaban atas pertanyaan Anda
   itu?
         ... Tidak   ... Ya
                                                            ¦
3. Jika tidak, apakah Anda berusaha dengan   _____¦__
   aktif mencari jawaban atas pertanyaan   v   v
   Anda ini?   PADA   Setelah
                                                   SAAT   itu ...
...Tidak --> Mengapa? _____   ITU   Kapan?
¦   ¦   _____
¦   ...Ya -> 4. Usaha/cara apa yang Anda   ¦   (pada
¦   lakukan dan tidak berhasil?   ¦   event
¦   ¦   yang
¦   _____   ¦   mana?)
¦   ¦   _____
¦   5. Dalam skala 0 - 6, menurut   ¦   v
¦   penilaian Anda, berapa banyak   ¦   atau
¦   usaha yang telah Anda lakukan?   ¦   Setelah
¦   ¦   masalah
¦   0---1---2---3---4---5---6   ¦   berlalu?
¦   tidak ada usaha   banyak   ¦   _____
v   ¦   (ke 7)
6. Menggunakan skala 0 - 6, menurut penilaian   ¦   ¦
   Anda, berapa penting bagi Anda untuk mendapat   ¦   ¦
   jawaban atas pertanyaan Anda?   ¦   ¦
                                                     ¦   ¦
       0---1---2---3---4---5---6   ¦   ¦
tidak penting   penting sekali¦   ¦
                                                     ¦   ¦
(STOP DI SINI,   (ke 7)   ¦
LANJUTKAN KE PERTANYAAN BERIKUTNYA)   v   v
     ¦

7. Apa jawabannya? _____

_____

8. Darimana Anda dapatkan jawaban tsb.? (sumber)

_____

9. Menurut penilaian Anda, apakah jawaban yang Anda peroleh
   tsb. sudah <u>sempurna</u> (lengkap/komplit) atau <u>masih kurang</u>?

   ... sempurna   ... masih kurang

10. Menurut penilaian Anda, mengapa jawaban tsb. <u>sempurna</u> atau
    <u>masih kurang</u>?_____

_____

11. Apakah jawaban yang Anda peroleh dapat membantu/menolong
    Anda sebagaimana yang Anda harapkan?

    ... tidak   ... membantu,   ... membantu
    membantu   tapi tak seperti   sebagaimana
    ¦   yang diharapkan   diharapkan
    v   ¦
12. Dalam hal apa jawaban tsb.   (ke 13)   ¦
    tidak membantu Anda? _____   ¦
                                   ¦   (ke 14)
                                   ¦   ¦
    _____   ¦   ¦
    ¦   13. Dalam hal apa jawaban tsb. membantu ¦
    ¦   tapi tak seperti yang Anda harapkan? ¦
    ¦   ¦
    ¦   _____   v
    ¦   14. Apakah jawaban tsb. juga membantu Anda
    ¦   dalam hal lain? (jelaskan, dalam hal
    ¦   apa?)
    ¦   _____
    v   v   v
15. Apakah Anda berusaha dengan aktif mencari jawaban atas
    pertanyaan Anda ini?

... Tidak --> Mengapa? _____
  ¦
  ¦ ... Ya -> 16. Usaha/cara apa yang Anda lakukan dan
  ¦   berhasil? _____
(ke 19)   _____
  ¦
  ¦   17. Usaha/cara apa yang Anda lakukan dan tidak
  v   berhasil? _____
  ¦   _____
  ¦
  ¦

18. Dalam skala 0 - 6, menurut penilaian Anda,
    berapa banyak usaha yang telah Anda lakukan
    untuk mendapatkan jawaban atas pertanyaan
    Anda ini?

                0---1---2---3---4---5---6
        tidak ada usaha   banyak

19. Menggunakan skala 0 - 6, menurut penilaian Anda, berapa
    penting bagi Anda untuk mendapat jawaban atas pertanyaan
    Anda ini?

                0---1---2---3---4---5---6
        tidak penting   penting sekali

        (STOP DI SINI, LANJUTKAN KE PERTANYAAN BERIKUTNYA)

RESPONDENT # ....

===

Nama: _____

NIM: _____

Alamat: _____

            _____

            _____

Telepon: _____

Wawancara mulai jam: _____

        sampai jam: _____

Lama wawancara (dalam menit):   _____

Tanggal wawancara: _____

Tempat wawancara: _____

Pewawancara: _____

┌─────────────────────────────────────┐
│ Jenis kelamin respondent: │
│   │
│   ... Pria   ... Wanita   │
└─────────────────────────────────────┘

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303

RESPONDENT # .....

DATA RESPONDENT

Cukup panjang juga diskusi kita. Terima kasih atas kesabaran dan bantuan Anda. Sebelum diskusi ini kita akhiri, ada beberapa pertanyaan lagi yang saya perlu tanyakan pada Anda:

20. Usia/tanggal lahir: ....

21. Jumlah beban kredit semester ini: ....

22. Biaya untuk kuliah didapat dari:

    ... a. tabungan
    ... b. bekerja (biaya sendiri)
          -->   - di pemerintah ....
                - di swasta ....
                - lainnya (jelaskan!) ....

                - Pangkat/jabatan Anda? ......
                ....

    ... c. biaya orang tua
    ... d. beasiswa (jelaskan!) ....
    ... e. Kredit Mahasiswa Indonesia
    ... f. lainnya (jelaskan!) ....

23. Sampai saat ini, berapa jumlah SKS yang telah Anda tempuh/ selesaikan? ....

24. Setelah lulus SMA (atau sederajat) pendidikan apa saja yang pernah Anda ikuti dan berapa lama?

Nama	Lama	Nama	Lama
....	a. 0 - 1 tahun	....	d. 4 tahun
....	b. 2 tahun	....	e. 5 tahun
....	c. 3 tahun	....	f. lainnya (jelaskan!)
			....

25. Berapa jumlah penghasilan Anda (atau keluarga Anda) rata- rata per bulan selama tahun lalu ?

    ... a. - Rp. 30.000,-
    ... b. Rp. 31.000,- - Rp. 100.000,-
    ... c. Rp. 101.000,- - Rp. 200.000,-
    ... d. Rp. 201.000,- - Rp. 300.000,-
    ... e. lebih dari Rp. 300.000,-
    ... f. menolak menjawab
    ... g. tidak tahu /N.A.

Sekali lagi, terima kasih atas bantuan Anda. Semoga Anda sukses!

APPENDIX B

SYRACUSE UNIVERSITY
INSTITUTIONAL REVIEW BOARD / HUMAN SUBJECTS
MERRILL LANE | SYRACUSE, NEW YORK 13244-5290
Telephone (315) 443-3013

MEMORANDUM

TO: Paulina Pannen
Michael Nilan

DATE: 10/11/88
IRB# 88-136

SUBJECT: Proposal submitted for expedited review entitled:

Comparative Study on Information Seeking Behavior of Residential and Non-Residential Students

Your proposal was given expedited review and on behalf of the Institutional Review Board, I wish to inform you that it has been given FULL APPROVAL. The information you submitted pertaining to the above proposal was reviewed for evaluation of your judgment in determining:

1. the rights and welfare of the individual(s) under investigation.
2. the appropriate methods to secure informed consent, and
3. the risks and potential benefits of the investigation.

It is my judgment that your proposal conforms to the University's policy relative to the use of human subjects and its assurance to the Department of Health and Human Services. Your protocol is approved for implementation and operation for a period of one year. If the project continues beyond 10/31/89 , you must submit assurance that the approved protocol is being used and request approval for the additional period required.

PLEASE NOTE: By its very nature, research involving human subjects often requires significant change in plans and procedures. You are reminded that it is your responsibility to inform the Board promptly of any such changes in your protocol and request review and approval.

Ronald T. Verrillo, Chairman

Secretary for the Board

MEMORANDUM

TO: Paulina Pannen
Michael Nilan

DATE: July 13, 1989

IRB#: 88-136

SUBJECT: Renewal Approval for Use of Human Subjects

TITLE: Comparative Study on Information Seeking Behavior of Residential and Non-Residential Students

Your request for renewal of your human subjects protocol for the year ahead has been reviewed and approved.

If you propose to carry on this work after 7/31/90 , you will need to submit another request for renewal. Please call the Board's secretary, ext. 3013, if you would like to have a REQUEST FOR RENEWAL FORM.

PLEASE NOTE: By its very nature research involving human subjects often requires significant change in plans and procedures. If this should occur, you need to inform the Board promptly and to request review and approval.

R. T. Verrillo
Ronald T. Verrillo, Chairman

Gloria Arno
Secretary for the Board

Dengan hormat,

Dengan ini kami beritahukan bahwa Saudara telah terpilih menjadi responden dalam proyek penelitian "Perilaku Informasi Mahasiswa Universitas Terbuka di UPBJJ-UT-Jakarta dan UPBJJ-UT-Ujung Pandang". Proyek penelitian tersebut bertujuan untuk mengetahui pola mahasiswa Universitas Terbuka dalam mencari informasi, baik informasi akademis maupun informasi administratif yang menunjang proses belajar mandiri.

Hasil proyek penelitian ini akan diolah untuk menjadi disertasi yang disyaratkan dalam program doktor pendidikan di Syracuse University, New York, U.S.A. Selanjutnya, juga akan berguna untuk menjadi acuan kerja para pimpinan Universitas Terbuka di Jakarta dalam merencanakan jasa informasi yang efektif bagi mahasiswanya.

Sehubungan dengan hal tersebut, kami mohonkan kesediaan Saudara untuk diwawancara selama kurang lebih dua (2) jam. Untuk keperluan pendataan responden dan pengaturan jadwal wawancara, kami mohon Saudara mengisi formulir terlampir (lengkap dengan amplop dan perangkonya) dan dikembalikan kepada kami sebelum tanggal 4 September 1989.

Selanjutnya, kepastian jadwal wawancara Saudara akan kami beritahu melalui surat atau tilpun. Jika tidak ada pemberitahuan lebih lanjut dari pihak kami, Saudara diharapkan datang pada jadwal yang telah Saudara pilih. Tempat wawancara adalah Kantor UPBJJ- UT-Jakarta di Rawamangun.

Informasi yang Saudara berikan kepada kami akan kami jaga kerahasiaannya, sehingga hanya peneliti utama yang mempunyai hak untuk membaca dan mengolahnya.

Kami dan beberapa orang teman yang akan membantu kami untuk mewawancara Saudara akan berada di Jakarta pada tanggal 10 s/d 27 September 1989. Imbalan ala kadarnya akan kami sediakan untuk partisipasi Saudara dalam penelitian ini. Partisipasi Saudara dalam proyek penelitian ini sangat kami harapkan.

Sebelum dan sesudahnya kami ucapkan terima kasih.

Hormat kami,

Dra. Paulina Pannen, M.L.S.
Peneliti Utama
Syracuse University

PROYEK PENELITIAN
PERILAKU INFORMASI MAHASISWA UNIVERSITAS TERBUKA

Sekretariat: Perpustakaan Universitas Terbuka
Jl. Raya Terbang Layang, Pondok Cabe, Ciputat
P.O. Box 6666, Jakarta 10001
Telepon: 021 - 7490941

==

NAMA:_____

NIM:_____

REGISTRASI TERAKHIR: ___ Desember 1987/Januari 1988

                        ___ Juli/Agustus 1988

                        ___ December 1988/Januari 1989

                        ___ Juli/Agustus 1989

ALAMAT:_____

_____

_____

TELEPON: (rumah)_____

         (kantor)_____

Bersedia diwawancara pada tanggal: (lingkari pilihan

Saudara)   10   11   12   13   14   15   16   17   18

19 20   21   22   23   24   25   26   27 September 1989,

pada jam: (beri tanda silang pada pilihan Saudara)

____ 9.00 - 12.00 pagi   ____ 12.00 - 15.00 siang

____ 13.00 - 16.00 siang   ____ 16.00 - 19.00 sore

____ 17.00 - 20.00 sore

Tempat wawancara: Gedung UPBJJ - UT Jakarta

                  Rawamangun, Jakarta Timur.

Dengan hormat,

Dengan ini kami beritahukan bahwa Saudara telah terpilih
menjadi responden dalam proyek penelitian "Perilaku
Informasi Mahasiswa Universitas Terbuka di UPBJJ-UT-Jakarta
dan UPBJJ-UT-Ujung Pandang". Proyek penelitian tersebut
bertujuan untuk mengetahui pola mahasiswa Universitas
Terbuka dalam mencari informasi, baik informasi akademis
maupun informasi administratif yang menunjang proses belajar
mandiri.

Hasil proyek penelitian ini akan diolah untuk menjadi
disertasi yang disyaratkan dalam program doktor pendidikan
di Syracuse University, New York, U.S.A. Selanjutnya, juga
akan berguna untuk menjadi acuan kerja para pimpinan
Universitas Terbuka di Jakarta dalam merencanakan jasa
informasi yang efektif bagi mahasiswanya.

Sehubungan dengan hal tersebut, kami mohonkan kesediaan
Saudara untuk diwawancara selama kurang lebih dua (2) jam.
Untuk keperluan pendataan responden dan pengaturan jadwal
wawancara, kami mohon Saudara mengisi formulir terlampir
(lengkap dengan amplop dan perangkonya) dan dikembalikan
kepada kami sebelum tanggal 14 September 1989.

Selanjutnya, kepastian jadwal wawancara Saudara akan kami
beritahu melalui surat atau tilpun. Jika tidak ada
pemberitahuan lebih lanjut dari pihak kami, Saudara
diharapkan datang pada jadwal yang telah Saudara pilih.
Tempat wawancara adalah Kantor UPBJJ-UT - Ujung Pandang di
Kampus Bharaya, Ujung Pandang.

Informasi yang Saudara berikan kepada kami akan kami jaga
kerahasiaannya, sehingga hanya peneliti utama yang mempunyai
hak untuk membaca dan mengolahnya.

Kami dan beberapa orang teman yang akan membantu kami
untuk mewawancara Saudara akan berada di Ujung Pandang pada
tanggal 4 s/d 21 Oktober 1989. Imbalan ala kadarnya akan
kami sediakan untuk partisipasi Saudara dalam penelitian
ini. Partisipasi Saudara dalam proyek penelitian ini sangat
kami harapkan.

Sebelum dan sesudahnya kami ucapkan terima kasih.

Hormat kami,

Dra. Paulina Pannen M.L.S.
Peneliti Utama
Syracuse University

PROYEK PENELITIAN
PERILAKU INFORMASI MAHASISWA UNIVERSITAS TERBUKA

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==

NAMA: _____

NIM: _____

REGISTRASI TERAKHIR: ___   Desember 1987/Januari 1988

                         ___   Juli/Agustus 1988

                         ___   December 1988/Januari 1989

                         ___   Juli/Agustus 1989

ALAMAT: _____

_____

_____

TELEPON: (rumah)_____

         (kantor)_____

Bersedia diwawancara pada tanggal: (lingkari pilihan

Saudara) 5   6   7   8   9   10   11   12   13   14   15

16 17 18 19 20 21 Oktober 1989,

pada jam: (beri tanda silang pada pilihan Saudara)

____ 9.00 - 12.00 pagi   ---- 12.00 - 15.00 siang

____ 13.00 - 16.00 siang   ____ 16.00 - 19.00 sore

____ 17.00 - 20.00 sore

Tempat wawancara: Gedung UPBJJ - UT Ujung Pandang

                         Kampus Bharaya

                         Ujung Pandang

APPENDIX C

TRAINING PROCEDURES

(Day One)

I.   Purpose of study

II. Review training manual with emphasis on:
     A. Conceptual notion of information needs in terms of
        1. User perspective vs. system perspective
        2. Cognitive movement
        3. Gaps and information uses
     B. Operational notions of "listening"
        1. Time/space context (events in story board)
        2. Questions
        3. Information seeking variables (source, importance etc.)
        4. Information use variables (expected and actual helps, etc.)
        5. Probes (clarity, coverage and depth)
     C. Interviewer - Respondent rapport
        1. Trust and cooperation
        2. Concern and respect for the situation as seen by the respondent
        3. Interviewer control

III. Fielding the instrument
     A. Know the instrument inside and out
     B. Interviewing schedule
     C. Importance of recording
        1. Legibility
        2. Paper trail
        3. Immediate transcription
     D. Fielding hints
        1. Interviewer behavior
           a. Punctuality
           b. Politeness
        2. Respondent behavior with examples of difficult and negative situations

IV. Review of the instrument in "real time"

V.   Interviewers should review training manual and instruments for day two.

(Day Two)

I.   Question and answer review of Day One

II.   Role play interview with extensive explanation of
      interviewer and instrument moves

III. Interviewers conduct interviews with each other - once
      as R, once as Interviewer.

IV.   Discussion of "troublesome" aspects

V.   Resolve "troublesome" aspects

VI.   Role play interview in "real time"

VII. Interviewers interview at least two colleagues,
      friends, etc. in a manner as close as possible to
      fielding conditions
      A. Interviews should be taped
      B. Interviews should be transcribed

(Day Three)

I.   Check in interviews to demonstrate data management that
      will be used in actual fielding

II.   Discuss difficulties - practice probes, especially
      chaining

III. Review data management procedures

IV.   Two more practice interviews

V.   Trainer review the interviews conducted, both written
      and audiorecorded.

(Day Four)

I.   Check in interviews with help

II. Discuss problems

III. Describe actual sampling design and fielding plan

IV. Those interviewers who still need practice, conduct two
     more interviews

V.   Assignments
     A. Go interview   or   B. More pretesting

     - interview schedule
     - intruments
     - stationery
     - money
     - others.

APPENDIX D

Date: November 15, 1989

Project Title: A Study in Information Seeking and Use
                 Behaviors of Resident and Non-resident
                 Students in Indonesian Tertiary Education

i

Date: November 15, 1989

```
-----------------------------------------------------------------
#     Column #      Variable                Code
-----------------------------------------------------------------
001   01/02/03      Project #               289

002   04            Location Code           1 = Jakarta
                                            2 = Ujung Pandang

003   05/06/07      Respondent #            101 - 299

004   08            Residency Status        0 = NR
                                            1 = R

005   09/10/11      Length of Interview     001-999
                    in minutes

      12            BLANK

006   13/14         Date of Interview       CA # 01

007   15            Sex                     0 = female
                                            1 = male

008   16/17         Age                     18-99

009   18/19         Credit load of the      00 - 99
                    current semester

      20            BLANK

010   21            Source of funding       0 = savings
                                            1 = work
                                            2 = parents
                                            3 = scholarships
                                            4 = loan
                                            7 = other
                                            9 = missing

011   22/23/24      Credit earned           000-999
```

i

Date: November 15, 1989

#	Column #	Variable	Code

012	25	Post high school ed.	1 = 1 year
			2 = 2 years
			3 = 3 years
			4 = 4 years
			5 = 5 years
			6 = 6 years
			7 = other
			(includes 0)
			9 = missing
013	26	Total family income	0 = - Rp.30.000.-
			1 = Rp.31 - 100.000
			2 = Rp.101 - 200.000
			3 = Rp.201 - 300.000
			4 = above Rp.300.000
			8 = refused
			9 = not applicable
	27	BLANK	
014	28	Situation Type	0 = Academic
			1 = Bureaucratic
015	29	Total # Event	1 - 9
016	30/31	Total # Questions	01 - 99
	32	BLANK	
017	33	Event #	1 - 9
018	34	Question #	1 - 9
019	35/36/37	Nature of Q: Descriptive	CA # 02
020	38	Nature of Q: 5 W	CA # 03
021	39	Nature of Q: Entity	CA # 04
	40	BLANK	
022	41/42	Help/Uses (#01, 13, 14) and not help (# 12) - Depth 1	CA # 05

i

Date: November 15, 1989

#	Column #	Variable	Code
	43/44	Help/Uses (#01, 13, 14) and not help (# 12) - Depth 2	CA # 05
023	45	Ever get an answer to Question? (# 02)	0 = No 1 = Yes
024	46	Time of answer	0 = Now 1 = later 2 = after
025	47	Actively try to get an answer? (# 03, 15)	0 = No 1 = Yes
	48	BLANK	
026	49/50	Reason for not trying (# 03, 15)	CA # 06
027	51/52	What seems to work (# 16) and did not work (# 04, 17) STRATEGY - Depth 1	CA # 07
	53/54	Strategy - Depth 2	CA # 07
028	55	Effort (# 05, 18)	0 - 6
029	56	Importance (# 06, 19)	0 - 6
	57	BLANK	
030	58/59	Source (# 08) - Depth I	CA # 08
	60/61	Source (# 08) - Depth II	CA # 08
	62/63	Source - Depth III	CA # 08
	64	BLANK	
031	65	Answer completeness (# 09)	0 = Partial 1 = Complete

Date: November 15, 1989

#	Column #	Variable	Code
032	66	Actual helpfulness of answer (# 11)	0 = did not help 1 = yes, but not in expected way 2 = yes, in expected way

Date: January 15, 1990

CA # 01: DATE OF INTERVIEW

Code	Date	Code	Date
01	09/10/89	21	10/05/89
02	09/11/89	22	10/06/89
03	09/12/89	23	10/07/89
04	09/13/89	24	10/08/89
05	09/14/89	25	10/09/89
06	09/15/89	26	10/10/89
07	09/16/89	27	10/11/89
08	09/17/89	28	10/12/89
09	09/18/89	29	10/13/89
10	09/19/89	30	10/14/89
11	09/20/89	31	10/15/89
12	09/21/89	32	10/16/89
13	09/22/89	33	10/17/89
14	09/23/89	34	10/18/89
15	09/24/89	35	10/19/89
16	09/25/89	36	10/20/89
17	09/26/89	37	10/21/89
		97	other
		98	don't know
		99	missing

Date: January 15, 1990

CA # 02 : Nature of Questions - DESCRIPTIVE (aboutness)

000	**Self**	
010	Self evaluation	e.g. Am I too old to handle all of this?
020	Self ability	
021	– Self Academic Ability	e.g. Should I get extra help from the professor?
022	– Self Financial Ability	e.g. Do I have money to buy the book?
030	Self time management	e.g. How long this would take?
100	**Academic Matters** (****For Academic Staff, use 410****)	
110	Grade **** Grade Report use 25 ****	e.g. How it is going to effect my grades?
111	Grade Point Average	e.g. Will a D be fatal for my GPA?
112	Grade Requirement	e.g. How much is the weight of attendance for my final grade?
120	Course Content	
121	– Subject Matter Area	e.g. What is the bone and muscle structure?
122	Syllabus/Handouts	e.g. Is the syllabus for the course ready?
130	Academic regulation and procedure	e.g. Why is there a restriction on the class?
131	Prerequisite/course sequence	e.g. Which course should be taken first, Moneter II or the Moneter Policy?
132	Course requirement of a program of study	e.g. Will the courses from other department be valid for my program? What courses should I take for my program?
133	Academic Deadline	e.g. When will be the deadline for submitting the individual assignment?

i

140	Academic support (****Support Personnel, use 420****)	
141	Textbooks, references, readings, modules, individual assignments	e.g. Is there any other books that I can read and use?
142	Library & other places (British Council, etc.)	e.g. Will the library carry this book?
143	Study group	e.g. Will the study group help me with math?
144	Tutorial program **** Time and Place of tutorial program, use 223****	e.g. Why the tutorial program was eliminated?
145	TV and radio broadcast	e.g. Is the TV broadcast relevant with the topic in the module?
146	Translation	e.g. Is my translation correct?
150	Intra and Extra Curriculum	e.g. Which English course should I take?

200 Administrative Matters
210 Registration

211	General procedure, entry and returning	e.g. Why the registration procedure was complicated?
212	Exams and re-exams	e.g. How to register for the re-examination?
213	KRS (SCORE) form	e.g. Why the department did not return my KRS?
214	Course and exams schedule/listing	e.g. Is there any new course on the schedule?
215	Credit limit	e.g. Can I exceed my credit limit for current registration?
216	Tuition	e.g. Do I need to show my tuition receipt?

220	Logistics		
221	Availability and distribution of forms, modules, assignments	e.g.	When will the form be available again?
222	Room, offices (where?)	e.g.	Where is the Central Office? How to go there?
223	When & where tutorial program	e.g.	When is the next tutorial?
230	Financial Aid	e.g.	What are the requirement to get the loan?
240	Sanction (academic and administrative)	e.g.	What is the sanction for late tuition payment?
250	Grade Report	e.g.	Can I get a copy of the grade report?
300	Strategy		e.g. What do I do now?
400	**Personnel**		
410	Professor/Instructor/Assistant/Tutor/Advisor		
411	Personality	e.g.	How do I know who to pick?
412	Behavior	e.g.	Why didn't the professor look at the syllabus before hand?
413	Office hour/appointment time	e.g.	When can I see my advisor?
414	Function and Role	e.g.	What is the function of an academic advisor?
420	Administrative and Support Personnel	e.g.	Whom I should ask for helping me with math? Will the UPBJJ staff be there to answer my question?

500   **Significant Others**

510   Friends   e.g. Will my friend be able to help me?
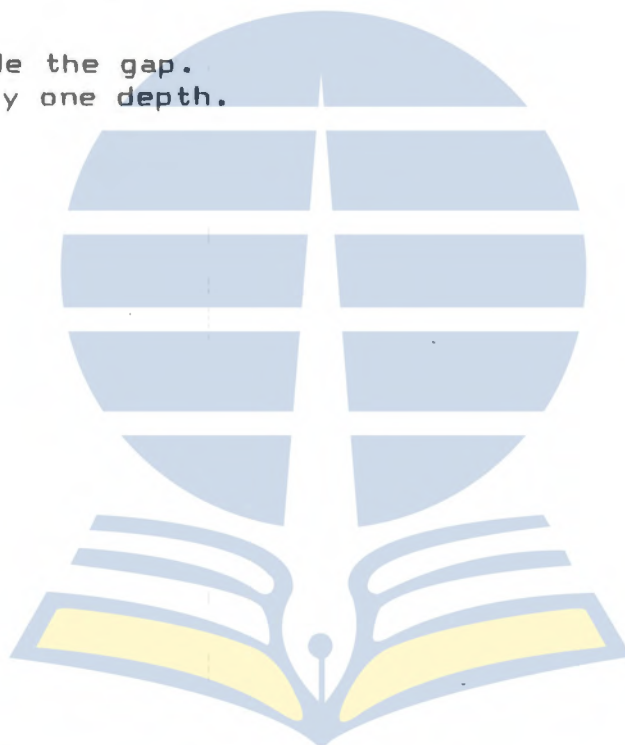
520   Family   e.g. Did my father have time?

970   Other

980   Don't know

990   Missing

Rule: Code the gap.
       Only one depth.

Date: January 15, 1990

CA # 03 : Nature of Questions - 5 W (Dervin, 1983, p. 58)

Code	Category	
0	When	e.g. When I am going to get my grade?
	(When :	attempting to locate one or more entities in time)
1	Where	e.g. Where is the Central Office?
	(Where:	attempting to locate one or more entities in space)
2	Why	e.g. Why I haven't received my modules?
	(Why:	attempting to determine reasons, causes and explanation of events)
3	How	e.g. How to fill in the registration form?
	(How:	attempting to determine the means or procedures for moving from one point tin time-space to another)
4	Who	e.g. Who I can ask for help?
	(Who:	attempting to identify one or more humans - who they are, what they are like, what they think or feel)
5	What	e.g. What was the topic of the group meeting?
	(What:	attempting to identify one or more nonhuman entities - objects or situational conditions)
7	Other	
8	Don't know	
9	Missing	

Rules: –   translate the content/meaning of the question, not
             only the question words. Indonesian question words
             may not exactly mean the same as the English
             question words when translated literally

      – Code <u>movement</u> as HOW

      – Code <u>static</u> as WHAT
      – WHAT is the default.

      – Try to connect the emphases (in case of two or more
         existing emphases) in each question with the existing
         gap (the user's gap) to determine which one is the more
         appropriate/important emphasis, then classify that
         emphasis using the 5W categories.

i

Date: January 15, 1990

CA # 04 : Nature of Questions – ENTITY FOCUS
                              (Dervin, 1983, p. 58)

Code	Category

0   **SELF**   e.g. Will I be able to study?

      (Self: attempting to bridge gap in which self
                 is major focus)

1   **OTHER**   e.g. How will my friends react
                                 toward my action?

      (Other: attempting to bridge gap in which one or
                 more others is major focus)

2   **OBJECT**   e.g. Where is my KRS form?

      (Object: attempting to bridge gap in which one or
                 more objects are major focus)

3   **SITUATION**   e.g. What will be the result of my
                                 exams?

      (Situation: attempting to bridge gap in which
                    one or more situations are major
                    focus)

7   Other

8   Don't know

9   Missing

Rules: –   <u>situation</u> is the last default after
              0, 1, 2.

        –   0 = about me – attributes of me

        –   1 = about person – attributes of other person

        –   2 = about thing – attributes of something
              (concrete object)

        –   Always remember the user's gap!

Date: January 15, 1990

CA # 05 : HELP/USES (Dervin, 1983, p. 61)

00   GOT PICTURES/IDEAS/UNDERSTANDING
        (:only one point in time in the movement of the user
        across time-space, no movement, no additional
        qualities)

                e.g. If this had been a mistake, I would have
                     understood.

01   ABLE TO PLAN
        (:including to prepare, to make decision what to do
        after)

                e.g. Help me to do better in the future.

02   GOT SKILLS
        (:only know-how skills or motor skills, not cognitive
        skills/strategies)

                e.g. Help me to be a better painter.

03   GOT STARTED, GOT MOTIVATED
        (: including initiation, high/new spirit, and
        motivation after an exhaustion, fatigue, or boredom)

                e.g. To motivate me to study further.

04   KEPT GOING
        (:to continue, to survive, to hang in there. Pictured
        as a linear line of the user's movement across time-
        space which still continues, not terminated yet)

                e.g. I can go on with other modules.

05   GOT CONTROL
        (:to gain power, authority over the movement across
        time-space, especially to make choice/selection)

                e.g. I can make up my mind.

06   THINGS GOT CALMER, EASIER
        (:just to make things easier or calmer, does not mean
        terminal, or get out of the gap)

            e.g. To ease my way to work on that item.

07   REACHED THE GOAL, ACCOMPLISHED THINGS
        (:to solve the problem, to complete things, to get
        things done. The nature is terminal at the end of the
        user's movement across time-space.)

            e.g. I can solve the problem.
                 I got what I want.

08   GOT OUT OF A BAD SITUATION
        (:just to be out from the existing/current unwanted
        situation, not terminal)

            e.g. If I know that I am late, I can look for the
                 modules as quickly as possible.

09   WENT ON TO OTHER THINGS
        (:causes or leads to other things to occur, does not
        mean getting out or termination of unwanted situation)

            e.g. It just confuses me.

10   AVOIDED BAD SITUATION
        (:to anticipate unwanted situation, to foresee bad
        situation, and able not to let that unwanted situation
        follow through)

        e.g. To get a better grade.

11   TOOK MIND OFF THINGS
        (:to let the mind not focus on the things anymore, does
        not mean getting out or terminating the unwanted
        situation)

            e.g. To lessen my mental burden.

12   RELAXED, RESTED
        (:mostly physical relaxation, recuperation and rest,
        does not involve emotion or mind)

            e.g. I feel relax now.

13   GOT PLEASURE
          (:include emotional and mind satisfaction, feeling and
          pleasure)

               e.g. I got satisfaction

14   GOT SUPPORT, REASSURANCE, CONFIRMATION
          (:in moving across time-space, user gets support,
          reassurance, confirmation of his/her movement, so that
          s/he can feel more certain, confident and capable)

               e.g. To feel being at the same boat with friends.

15   GOT CONNECTED TO OTHERS
          (:to help others to understand, get out of bad
          situation, reach the goal, etc., so that there is
          relationship between user and others as the user moving
          across time-space)

               e.g. So that I can give reason to the teacher.

97   Other

98   Don't know

99   Missing

Rules: -   "Would not have helped" code as 97

         -      God, mistique, belief, etc. code as 14

         -      Use OO as default.

Date: January 15, 1990

CA # 06 : STRATEGY

WORKED

00 Asking somebody — authority (directly:face-to-face, or
   indirectly:mail, telephone, etc.)
        e.g. Asked the advisor.

01 Asking oneself and thinking
        e.g. Asking myself and thinking it over.

02 Asking something
        e.g. Went to the Bookstore.
             Read the price label.

03 Reading and studying (connotes: individual learning)
        e.g. Looking in books.
             Study it over again

04 Waiting
        e.g. Waited to be contacted by mail.

05 Make one's own effort
        e.g. I tried to look for it myself in other office.

06 Asking friends and significant others (includes studying in
   groups)
        e.g. Asking friends and sisters

07 Don't care and give up
        e.g. Just give up and do not care anymore.

08 Carrying out the procedure (as mentioned in the school
   regulation or school catalog)
        e.g. Go to the post office, buy the form, fill in the
             form, then send the form to the UPBJJ.

09 No strategy
        e.g. I did nothing. She told me without me asking her.

NOT WORKED
   Strategies which did not work: use 1 instead of 0 as the
   first digit code.

97   Others
98 Don't know
99   Missing

Rule: — Code up to two (2) depths

Date: January 15, 1990

CA # 07 : SOURCE - Type

00 **Institutional**
01   Office and Officer
             e.g. Department Chairman

02   Instructor/Professor/Assistant/Tutor/Advisor
             e.g. Professor comments.

03   Books/other materials from the institution
             e.g. Course Catalog, campus newspaper, campus
             journal, journal, university mails and
             letters, required books, university catalog,
             announcement, grade/exams reports, modules,
             references

04   Post Office and other offices/officers
         (indirectly related to the educational
         institution)

10 **Non-Institutional Source**
11   Self
             e.g. My own conclusion

12   Friend
             e.g. Friends

13   Books/other materials from non-institution
             e.g. Local newspaper, not-required-books, mails,
             letters, popular magazines

14   Other offices/officers
             e.g. Office where I work (no relation with the
             educational institution at all)

97   Other

98 Don't know

99 Missing

Rule: Code up to depth 3

Date: January 15, 1990

CA # 08 : Reason for not trying (causes)

00 Time
e.g. Haven't had the time yet.

10 Money/Cost
e.g. Don't feel like it - did not want to pay more $.

20 Barrier:
21   fixed/rigid regulation
e.g. It is the rule! Nothing will change.

22   possibility
e.g. It is still 50-50 possibility for me for dropping
out.

23   do not know any other ways/alternatives
e.g. I don't know where to go from that point.

24   distance
e.g. The office is too far.

30 Self
31   Self understanding
e.g.I have already decided on it.

32   Self proof
e.g. I want to own that book for myself.

33   Self satisfaction
e.g. I felt satisfied already.

40   Value
41   Personal value   e.g. I was not about to vocalize
this, it's my own problem.

42   Cultural value   e.g. It is not worth arguing,
especially with someone who is
different.

50 Doesn't matter
e.g. Assuming it will be OK, they haven't kicked me out
of class.

60 Just wait, do nothing
e.g. I gave up and just waited.

70 Rhetorical Question
          e.g. It's only a question to myself.

80 Have got other alternatives
          e.g. I have read other books.

97 Other

98 Don't know

99 Missing

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