

IMPROVING THE FACE-TO-FACE TUTORIAL SYSTEM OF
DISTANCE EDUCATION IN UNIVERSITAS TERBUKA

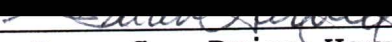
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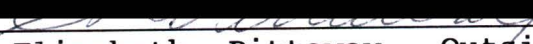
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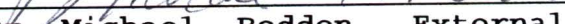
MASTER OF ARTS
in
the Department of Psychological Foundations in Education

We accept this thesis as confirming
to the required standard


Dr. C. Brian Harvey , Supervisor
(Department of Psychological Foundations in Education)


Dr. Geoff Hett , Departmental Member
(Department of Psychological Foundations in Education)


Dr. Elizabeth Pittaway , Outside Member
(School of Social Work)


Dr. Michael Bodden , External Examiner
(Department of Pacific and Asian Studies)

c LISDIANA SARI, 1994
University of Victoria

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Supervisor: Dr. C. Brian Harvey

ABSTRACT

The effectiveness of the face-to-face tutorials of Universitas Terbuka in Indonesia was examined in this study. The grades on two courses of the students who engaged in intensive tutorials were compared to the grades of those who participated only one or two times per semester.

The data obtained in this study were gathered from questionnaires administered to 588 students from two Regional Centers in Jakarta and in Pontianak. The study also examined the relationship between students' frequencies of attending the tutorial and their achievement on Mathematics and Introduction to Basic Science (IAD) courses.

Five conclusions were reached:

1. The results indicated that there were four factors that influence students to attend the tutorial: the student's professional background, student's academic backgrounds, reasons to attend the tutorial, and tutorial behavior;
2. The results indicated that different learning outcomes of different subject matters were accounted for by different sets of predictors. For IAD, the variable, "encourage an intensive decision", made the highest contribution of eight variables, $R=.979$, $F(64,76)=26.86$,

$p < .01$, to predicting the variability in grasping the essence of the tutorial. The variable, "discuss the last exam", made the highest contribution of eleven variables $R = .928$, $F(64,76) = 7.34$, $p < .01$, to predicting the variability in frequency of attending the tutorial. The variable, "to ask about some difficulty in the tutorial", made the highest contribution of two variables $R = .541$, $F(65,75) = .48$, $p < .05$, to predicting the variability in the student achievement on IAD.

For Mathematics, the variable, "to communicate with tutor", made the highest contribution of six variables $R = .994$, $F(42,0) = .963$, $p < .01$, to predicting the variability in frequency of attending the tutorial. The variable, "hesitate to study", made the highest contribution of four variables $R = .964$, $F(42,0) = .098$, $p < .05$ to predicting the variability in students' achievement on Mathematics. Only two variables contributed significantly to students' Mathematics achievement $R = .844$, $F(42,0) = .028$, $p < .01$. The variable, "the modules are too difficult", made the highest contribution to predicting the variability in students' achievement on Mathematics;

3. There were nine tutoring behaviour variables included in the analysis. The results indicated that the interrelationship among the variables was relatively high and positive. The correlation between student learning


outcomes and two variables, frequency of attending the tutorial and ability to grasp the essence of the tutorial, was positive and significant ($p < 0.5$);


4. There were no significant differences in frequencies of attending tutorials and achievement levels either on IAD or on Mathematics;

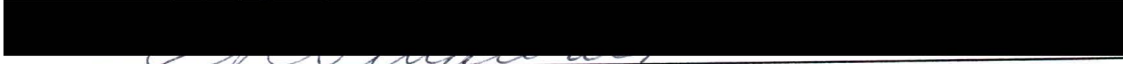
5. The results indicate that male students showed better achievement results than did female students on both IAD and Mathematics.

The results found in this study are discussed in terms of implications both for improving the tutorial programs and for improving students' achievement levels at Universitas Tebuka. Recommendations for further research are provided.

Examiners:


Dr. C. Brian Harvey, Supervisor
(Department of Psychological Foundations in Education)


Dr. Geoff Hett, Departmental Member
(Department of Psychological Foundations in Education)


Dr. Elizabeth Pittaway, Outside Member
(School of Social Work)



Dr. Michael Bodden, External Examiner
(Department of Pacific and Asian Studies)

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IMPROVING THE FACE-TO-FACE TUTORIAL SYSTEM OF
DISTANCE EDUCATION AT UNIVERSITAS TERBUKA

CHAPTER I

I. INTRODUCTION AND RATIONALE.

Holmberg (1981) stated that an important feature of learning at a distance is the separation of the tutor from the learner. Despite this separation, it is important that two way communication be maintained between the learner and the tutor so that progress, problems and attitudes can be discussed. It is not sufficient just to send printed material to learners and expect them to learn (Stoane, 1985). In distance learning programs, it is important that an effective method of providing feedback be used as it is often the only communication the learner will have with the teacher for a period of time. Not only does a system of questions and answers help the learners to monitor their own learning but also the reinforcement gained during the process motivates them to continue learning (Mc Gaine, 1967).

Universitas Terbuka (UT), an Indonesian Open learning University, uses distance learning as its educational system. UT uses multi-media materials such as books (material prepared for the courses), textbooks, cassettes, videocassettes, and television. Students study by using "self-instructional" learning materials which are

specifically designed to enable them to study on their own, independent of direct assistance from a lecturer, by attending study groups and tutorials, and by using the multi-media material.

There are two kinds of tutorials in UT. The first is the face-to-face tutorial, where the tutorial is given to help overcome the student's learning difficulties. Therefore, students need to study the learning material prior to attending the face-to-face tutorial session. The second kind is the distance tutorial conducted either by using a telephone or by employing correspondence (written), but this requires a period of time to communicate. Holmberg (1977) notes that there are forms of integrating distance study with face-to-face sessions that have been found to be profitable in running concentrated residential courses supporting individual distance study. These can help students overcome previously insurmountable difficulties. They can introduce and, thereby, facilitate, the study of new parts of the distance course; they can inspire cooperation with fellow students; and they can provide a pleasant academic atmosphere with motivational potential.

Hiola and Moss (1989) presented an evaluation study conducted within UT with specific reference to tutorial provision as seen from the viewpoint of the tutors

involved. The authors sought both to identify the nature of the current tutorial provisions and its associated problems within the university, and to suggest changes which might be needed to promote further development in this area.

It is important to bear in mind the following constraints which are features of Indonesia and which have implications for the Universitas Terbuka:

1. Indonesia is an island archipelago consisting of 6,000 inhabited islands and covering a total area (land and sea) of 8,000,000 km² (about the size of Australia) with a total territory which stretches for 4,800 km east-west and for 2,000 km north-south. The problems of communication for distance education students and tutors are, therefore, readily apparent.
2. Indonesia is comprised of five main islands, and the population density varies considerably. On Java it is around 690 people/km², but this is reduced to 59/km² on Sumatra and only 19/km² on most islands (Indonesia Dept. of Information, 1984). There is, in addition, a strong tendency towards urbanization, and, consequently, there are parts of Indonesia where there are high densities of urban population and other regions (sometimes whole islands) with very low densities. Again, this presents problems for a

distance teaching institution, since the kind of tutorial and other support that might be available and feasible in Jakarta or Surabaya (with high population densities) may not be feasible in rural areas.

UT is organized along lines similar to those of the British Open University. The headquarters are based 20 miles south of Jakarta (the capital city of Indonesia) at Pondok Cabe on the island of Java, but there are also 32 Regional centers throughout the Archipelago. Regional centers develop and co-ordinate the face-to-face tutorials provided by the Universitas Terbuka, and they are also responsible for local administration, examinations, and counseling.

Even though the UT materials are designed for students to self-study, there are a number of private universities which help UT's students by giving intensive face-to-face tutorials. In other words, they support the students more than UT services do, because they increase the twice per semester regular UT tutorials into intensive tutorials through the regional centers. The learning material is presented throughout by the course, which may be based on several media, and the didactic communication with the distance study school remains an essential element (Holmberg, 1973; Weisbrot, 1969). The influence of

supplementary face-to-face sessions on study success has been further studied by Bolte, Bohme, and Schwier (1974), Lockwood (1979), Muller (1974), Ness (1976), Smith (1976) and others who testify to their effectiveness.

Comprehensive analysis of the use of study centers and study-center networks, particularly in the Australian context, has been made by Gough (1980).

Researchers are not clear as to what constitutes a program that would promote academic achievement. Morgan and Toy (1970) indicated that the presence of tutoring does not guarantee an increase in the academic achievement of those receiving the tutoring. These reviews generally, however, construct an overall picture of tutoring as being an effective means of individual instruction, particularly in mathematics.

In order to improve UT's services to the students, and the quantity and quality of tutorials, it is important to conduct research both to determine whether or not the tutorial services in UT already support the expectation of helping students overcome difficulties, and to examine the students' perceptions about both UT's face-to-face tutorial and the intensive face-to-face tutorial provided by the private universities.

Gahan (1989) found that tutoring programs are widely implemented today in dealing with the subjects of

mathematics and reading. Fitz-Gibbon (1977) suggested that tutoring has the greatest effect in mathematics courses; this was one reason for the current research focus on mathematics as the course subject. The rationale for the research was that the intensive tutorial is expected to produce better results in students' achievement in mathematics. For UT, the results of this research could help to improve its system of students' services generally, and the tutorial system specifically. This may include, for example, an increase from twice per semester to six times per semester face-to-face tutorials. The students' opinions could also lead to improvement in the quality of the tutorials themselves.

CHAPTER II

LITERATURE REVIEW

This chapter consists of a literature review of researches which have been conducted into the relationships between the tutorial and several variables, such as, intensive tutorial, academic achievement, and cost effectiveness. The purpose of the literature review is to support this study by identifying the theoretical bases which were used in developing the rationale.

According to research in the area, tutoring does not significantly affect the academic achievement of students unless they attend tutoring at least six times during the semester (Gahan 1989). Gahan stated that never attending tutoring sessions has the same effect as attending one to five sessions. This suggests that if students are to benefit significantly from tutoring, they must receive tutoring on a more regular basis.

Colosimo (1981) reported that most students who fail, continue to fail and eventually drop out. If schools are to help these students and save them from this vicious cycle, tutoring should be examined and considered as an option in the curriculum. Greenwood (1984) noted that, as a group, the tutored students scored higher than did those in traditional lecture classes. Wepner (1981) found that, generally, attendance at tutoring sessions was not

mandatory but was suggested to students. Rosenhire and Furst (1969), Fitz-Gibbon (1977), and Devis-Sheehan (1976), in separate reviews, concluded that tutorial programs contribute to the academic performance of the students being tutored. However, Bierman and Furman (1981), in their study, found no change in the academic achievement of tutored students, indicating that the presence of tutoring does not ensure academic gains.

Morgan and Toy (1970) indicated that the presence of tutoring does not guarantee an increase in the academic achievement of those receiving the tutoring. The studies, however, generally construct an overall picture of tutoring as being an effective means of individual instruction, particularly in mathematics. Enoch (1989) stated that intensive tutoring is beneficial. Individual students in intensive study groups do better than regular students, and intensive tutoring contributes to academic success. It seems that more tutoring makes for better results.

Rekkedal (1985) stated that the educational system which includes a personal tutor/counsellor results in higher completion rates and more satisfied students, while for the institute, the system involves only a moderate increase in expenses. The possible increase ,if any, in expenditure is more than counterbalanced by the increased

gross income resulting from an increase of study activity.

Djalil (1987) based his research on the tutorial system of the Open University of Indonesia (UT) and those factors affecting student learning outcomes. He found that student background seemed to be of relatively small importance to student learning outcomes, especially with respect to student achievement. Unmarried and lower income or unemployed students (particularly younger students) tended to attend tutorials more often. Regarding student satisfaction, older and experienced students had more potential to take advantage of tutorials so that the existing tutorial programs did not discourage people from entering UT. The study also pointed out that different reasons for attending tutorial had different effects on particular learning outcomes.

Yahya and Moss (1989), in their study of face-to-face tutorial provision at UT, concluded that the purposes of tutorials in UT include :

- a. Tutoring which is clearly related to the academic problems of the student;
- b. Tutoring which is oriented to enhancing general study skills;
- c. Tutoring which deals with general problems arising from students working within the overall distance education system.

d. Tutoring in which the tutor plays the role of counsellor-tutor.

Yahya and Moss (1990) found that UT has tended to appoint mature tutors who are experienced in Indonesia's higher education as the core of their part-time staff. As a group, the tutors seem to regard their most important role as providing academic support related to course content. Attention to both student study skills and to counselling of students seem to be given lower priority in the eyes of the tutors. Perhaps predictably, tutors see their most important role as giving advice where needed and encouraging active participation in tutorials. However, they are reluctant to form close relationships with students.

Age and experience seem to be significant factors in influencing the behavior of a tutor in tutorials, and thus, these factors affect the nature of those tutorials. Universitas Terbuka needs both to consider the training provision which it makes for part-time staff, and to pay closer attention to the roles of tutors which are not directly related to the subject specialty.

Guri (1990) found that students in The Open University of Israel (OUI), who study in organized groups and get weekly tutorials have a higher perseverance rate as compared to students who study in the regular framework

which provides tutorial every three weeks; veteran students have a greater chance to complete courses successfully as compared to novice students; and the success rate in liberal arts and social science courses is considerably higher than the success rates of natural science and mathematics courses. The factors of age, sex and previous level of education were not found to have an impact on perseverance and success in studies.

Fage & Mills (1987) found that students need clear advice about the fact that appeals are an appropriate and normal response to a marked assignment, and that they are part of the student/tutor dialogue. Tutors need guidance both on how to set constructive contexts for appeals and on how to handle them when they are made a part of the learning process. The students must realize that appeals are not merely an administrative procedure; to do this, the tutorials should have several dimensions for the students.

Students need clear information on how to register complaints or take action if they are dissatisfied. Constructive criticism is important and an overall formal administrative system is often not helpful. Tutors can, on the other hand, be helpful and can often devise ways of gathering information which may be useful to them in the context of their own relationship with students.

As far as staff development is concerned, direct student involvement in staff development requires delicate handling. As a general aim, staff development will seek to enable tutors to be more responsive to student needs and expectations; this is most likely to be achieved by a range of strategies for increasing the tutors' confidence and openness.

Fraitas and Lynch (1984) stated that an intensive two-way communication system between an institution and its clientele is necessary. Academic advisors and counselors have not only to be specialists in adult education but also they must be deeply committed to enhancing the students' motivation. Nontraditional adult students may not understand the learning support role of counselors and advisors who appear to them to be too young. In the perception of older learners in developing countries, where age is related to knowledge, adults may be hesitant to ask the assistance of younger counselors and advisors unless these resource people are oriented to working with older adults. However, this age variable may correlate with other variables which need to be observed and analyzed in future studies. Some of the recommendations of the Fraitas and Lynch study (1984), mainly the ones regarding the development of a stronger two-way communication system between students and UNA

(The National Open University of Venezuela), and better counselors' assistance to students (especially to the older and less socio-economically privileged students), have been successfully put into practice.

Ron (1990) suggested several implications of the use of assignments, especially by open and distance learning institutions. The first implication is that the reliability of these assignments appears commensurate with the reliability of other assignments, at least within the open university. However, this does not mean that they are reliable in any absolute sense. Much will depend on how carefully the assignments are executed: grading any particular piece of work reliably is difficult at the best of times, and it is only through the accumulation of results that one is able to make fairly confident judgements about ability and performance and, indeed, aspects of competence.

Secondly, the implications of Ron's (1990) study on the work of trainers and educators must also be considered. It remains unclear quite how great are the additional demands placed on trainers and educators by experienced-based assignments, but there are grounds for concern about the use of conventional work-load planning assumptions. This is particularly so in the area of management education, which is expanding rapidly and where

there is a need to recruit, train, and retain large numbers of tutors. This is partly a question of payment rates, although payment is probably not the main motivation of most management tutors (especially if they are practising managers). There is still an issue of how far bodies like the open university can presume on the goodwill of the tutors. It is also a question of staff-development and of helping new tutors to distinguish between effective and ineffective comments when responding to experience-based assignments. The fact is that work on such assignments is obviously important, but the aim must be to make them work well, both formatively and summatively.

How do open learning tutors know how well they are meeting their students' needs? How do they learn how to improve their tutoring performances? Students and tutors must see and treat each other more as equal partners in the negotiation of learning for which they assume a joint responsibility. Naylor, Cowie and Stevenson (1990) proposed a number of suggestions based on their study :

1. Students and tutors enjoy a cooperative, trusting, relaxed, and satisfying interpersonal relationship. Tutors are more able to respond to the diversity of students' needs principally because their needs become openly expressed. There is more scope for trying out new ideas

tentatively in a cooperative situation.

2. Tutors enjoy greater satisfaction from the knowledge that they are being properly and professionally developed for the direct and immediate benefit of the students.

3. The students' perspective is a valuable one which need not, and perhaps, does not present any real "threat" to tutors; it should be actively used rather than ignored.

Reflections can build a bridge between concrete experience and the formal learning of abstract concepts. Students and tutors, thus, become active partners in the processes of acquiring knowledge, new concepts and understanding.

4. In encouraging the development of tutoring along the lines discussed in Naylor et.al.(1990), open learning institutions might meet their obligations and responsibilities to tutors as follows :

a. funding the development of course tutoring using feedback by building its cost into course production, presentation and maintenance budgets;

b. providing tutors with the considerable secretarial and administrative resources they need so that they can communicate effectively with their students and one another;

c. recognizing that students' essay writing skills cannot be assumed to be tuned or even always well developed by the end of the foundation course and that, therefore, such

skills teaching should be built into courses and the budgeting of tutorial provisions at all levels;

d. developing the tutors' correspondence abilities and assessment skills through the adoption of stronger models of monitoring which are formative and interactive and which involve the students', tutors' and monitors' perspectives.

In most successful distance teaching institutions throughout the world, an element of interactive or face-to-face tuition forms part of the provision (Rumble & Harry, 1982). However, such provision is difficult and expensive to provide within a distance teaching context. The difficulty arises because students may often be far removed from locations where tutorials are offered. In addition, the provision of face-to-face tutorials is costly in staffing since none of the cost effective gains associated with other aspects of distance education can be applied to tutorials. The expenditure of resources in this area, therefore, merits thorough and on-going evaluation.

The situation at UT provides a unique opportunity for examining tutorials. UT course materials, which are prepared and distributed to students, consist of textual materials supported by audio cassettes and a limited number of video cassettes. Setijadi (1989) has written fully on the selection, the use, and the limitation of the

teaching media for Universitas Terbuka; however, it is worth pointing out that UT is experimenting with teletutorials (a teleconferencing facility using satellite links between islands) and with single-side band two-way radios. Broadcast radio is regularly used, but at present, there is very limited access to broadcast television.

At many distance teaching universities, face-to-face tuition is provided as an optional supplement to the distance learning materials. Holmberg (1981) points out that personal contact can facilitate understanding. To this end, UT provides three tutorials per semester for each course and supplements this basic provision by providing two additional tutorials prior to each examination period. In addition, it was shown by Hiola and Moss (1989) that a number of UT students privately fund additional tutorials to support their studies.

Fauziah and Rahman (1990), in their study of face-to-face components in distance education at Universiti Sains Malaysia (focusing on the compulsory annual residential intensive course), state that the organizing of the three-week residential school entails a great amount of systematic and careful planning by the administration. Cooperation from other university bodies is also deemed official, critical, and necessary for the well-being and success of the program. The activities for

the three-week program are planned months ahead to alleviate any hitches that might arise and create problems. Students are constantly reminded that the residential school is compulsory and failure to attend it will result in the student either getting a failing grade for all registered courses or in being barred from taking the final examination.

The schedule of this intensive residential course is comprised of both academic and social or administrative activities. The academic program includes lectures/tutorials, examination/tests, laboratory sessions and course registration. The social or administrative activities include such things as attendance and dormitory registration, sports, a cultural night, forums, non-academic lectures and dinner. The problems most commonly associated with the intensive course are late registration caused by arriving on-campus later than the set date, early departure or failure to attend. Most of the reasons given are primarily related to family/personal, work and health problems. Students who do not attend the intensive program and who fail to provide a valid reason are faced with action from the University administration. The students are either required to postpone their studies (with or without penalty) or are completely removed from the program. The session showed a 90.8% attendance. The

Intensive Course has been maintained at three weeks and not shortened to two weeks, as was suggested, in order not to compromise the academic needs of the students. Supporting services are still far from the optimum which would warrant the shortening of this face-to-face component of distance education. Research findings' indicated that the students value the intensive course and benefit a great deal from attending it.

Although UT does not provide an intensive residential course as does in the Universiti Sains Malaysia, UT has made efforts to provide many support systems, including face-to-face tutorials and study groups. A series of studies of face-to-face tutorial students has been carried out in the last five years (Motik, 1989). The series began when UT had a policy for regular tutorial (3 times per semester) in every course being offered, and continued to the time when UT decided to provide tutorials based on the students' requests only. In general, the results of these studies indicated that UT students showed high interest and high perceived needs for tutorials. However, when the frequency of the regular tutorial was decreased and the tutorial was only given to those students who requested it, the request for tutorials also decreased. Another phenomenon which appeared at the same time as the decreasing request for tutorial was the establishment of

study groups everywhere in Indonesia. Setijadi (1984) commented that the decreasing request for tutorials may be caused by the formation of the study groups. Although study groups are perceived as potential means for supporting students' learning (Katasurya, 1990), there are several obstacles to maintaining them. Usually, when students form a study group, they also accumulate some funds to hire professional lecturers who could easily be asked to go over the examination questions so that the students in the group would be better prepared for the examinations. Due to socioeconomic problems, not all of the study groups could afford to hire professional lecturers, and not all students could join a study group. Some groups were stable and have continued to the present, while others have disbanded.

The current trend is the establishment of a "UT Campus". In general, it is a type of regular lecturer service provided by a private institution to UT students as a fee-based service. This kind of service has attracted UT students who have the money to pay for the service, and students who come directly from high school (freshman students) and who are usually very dependent and used to rote learning.

It is also worth noting that most of these face-to-face services are focused on "teaching" or "lecturing" in

the subject matter area. The disadvantage of this system is that it does not allow students to be active in working at their own pace with their own creativity. Such a system, Moore (1983) claims, is not meeting the learning needs of the learner, but is only reinforcing the learner's emotional immaturity and dependency. Pannen (1990) conducted a study of UT students in Jakarta, Java and Ujung Pandang, South Sulawesi. The results, in general, indicated that the distance education student requires several kinds of information, i.e., academic information (course-related), administrative information (system-related), and also advisory information (self-related). The study also indicated that students relied heavily on face-to-face meetings with friends, significant others, family/relatives, academic officers (tutors, instructors, etc.) and administrative officers. The students, furthermore, perceived that the face-to-face meeting/support was meant to make acquaintance, to obtain information and clarification about the system, and to obtain support for their self concepts. The students stated that they used the information obtained to plan, to confirm their beliefs and to make them feel better about themselves. In Indonesia, where there is no long-standing tradition for individual learning, independent learning is very difficult to reinforce. The face-to-face

component still plays a very important role, especially for socialization, as indicated by the research.

How then can UT organize this face-to-face component into a support system for the students' learning process which is designed based on the students' needs?

It is clear that the student's learning alone at a distance lacks the supportive atmosphere. Therefore, the face-to-face component in UT is very important, along with the other choices available to UT students. Full face-to-face learning, however, is not easily accommodated by UT because it is a distance education institute in nature, and also full face-to-face teaching is very costly. Therefore, the interactive techniques which must be fostered by UT should be a combination of print, broadcast and face-to-face opportunities.

These interactive techniques also function as tangible links between the central office of UT and the local student community. UT must provide opportunities for the students to obtain information about the institution, application and registration, examinations and students' record system. UT must also provide opportunities for counselling for supporting the student's self-concept and for teaching students how to learn at a distance. It can be assumed that all students need subject matter-related information, while perhaps not all students

need other kinds of information in the face-to-face service; thus, provision of the course-related information through the face-to-face service can be seen as a more cost effective service than the provision of other kinds of information. It is expected that this students' learning group does not fall into the category of creating conventional education in a distance education setting. "Hopefully, it will grow fruitfully into a service which enhances and improves the students'" learning process. It should become one of the rich and varied choices which are available to students learning at a distance (Pannen, 1990).

Setijadi (1984) suggests that it is difficult to organize a strong student service unit which can provide a rich variety of services available to all UT students. Especially for the face-to-face component in student services, there are five factors to be considered:

1. There are factors related to potential capacity.

Does the face-to-face service have the necessary support, i.e., qualified staff who can manage it, facilities, accommodation? Is it accessible at the necessary times and places to satisfy students' requirements? Does it have a clear role, function, and mission?

2. There are factors related to actual usage.

Although a series of studies indicated high interest in

and demand for having face-to-face service, when should it be offered, who are the customers? who are the non-customers? and why are they noncustomers?

3. There are factors related to attitude. What are the students' attitudes toward the face-to-face service? What are the attitudes of the course developers and administrators toward this service?

4. There are factors related to the objectives of the provision of face-to-face service as perceived by the parent institution. Are those objectives being met? What kind of face-to-face service can UT provide for its students? What kind of face-to-face services do the students need?

5. There are factors related to cost. Does the face-to-face service provide a service at reasonable and affordable cost? How costly is it for the parent institution to initiate such service? Can benefits be observed and reported?

The face to face support can only be offered to students as a clear function of the distribution of students. This means that it is only viable if there is a significant population nuclei in one geographical area. Otherwise, it will be difficult and costly.

There is an overwhelming tendency, within the field of teaching at a distance, to offer systems from the

standpoint of the institution teaching at a distance, rather than from the standpoint of the students learning at a distance. The response to the individual needs of the student learning alone, and at a distance, have often become lost in the overriding requirement to produce a grand package of materials (Ismail, 1991)

It is suggested that a combined system of distance teaching and face-to-face teaching in the form of academic coaching through tutoring and counselling where the tutor does not teach the subjects in a traditional way, but helps the students to learn from the package of materials either by himself or in groups, is best. Face-to-face sessions such as tutorial classes, day-schools, practicum and workshops could be arranged to help individual students who are in need (Ismail,1991). This system is not contradictory to distance learning but complementary. It can be a stepping stone from group learning to self learning and can also be an early step toward adapting to learning at a distance.

The detailed characteristics of the registered students in UT have been reported by Hiola and Moss (1989). They indicate that a high proportion of students have minimal entry qualifications. This particular group seems to have highly valued the tutorial provision made by UT. This has implications for the university as it plans

its development into the next decade and beyond. One future option for UT is to expand its role and draw in lower level courses, perhaps equivalent to the Open College provision within the United Kingdom. However, the likely clientele for such courses would be less well qualified than existing UT students and in other distance teaching universities with such student characteristics, drop out rates are very high. Such a development might imply that significant additional funding would be necessary for face-to-face tuition. If the high costs of this form of tuition are to be reduced, then, in all probability, the reduction must be paralleled by improvements in the study guidance and support given by the institution as a supplementary source of tuition which could be very cost effective. Television can also play a useful role in supporting isolated learners who come to feel that they are part of a larger group as a result of watching the programs. If tutorials are to be retained, but made more flexible and receptive to learner needs, then the experiments being conducted with telephone tutorials and side band radios might need to be expanded. However, the geography and population distribution of Indonesia suggest that it might be worthwhile to implement these additions in different regions. For example, centers with high population density and

reasonable ground communication could operate a conventional tutorial system while more remote, less densely populated regions, could make more use of the interactive media (radio and telephone) to counter the problems of long distances.

The results presented here reflect the situation in only one regional unit of UT. It would certainly be worthwhile extending elements of the study to different regions of Indonesia in order to obtain a more complete assessment of both the impact and the problems associated with tutorial provision in distance education in this unique developing country.

One of the major complications of this approach is the tendency to employ uniform student-support strategies in distance-education programs (Thompson, 1989). For example, the provision of an instructional support system such as systematic telephone tutoring (Flinck, 1978) is typically implemented on a system-wide basis which may discourage its implementation when costs are estimated on the basis of provision to all students. Indeed, the high costs of opportunities for real-time interaction between students and their instructor (e.g., teleconferencing or computer-based communication) often frustrate their implementation (Daniel & Marquis, 1983).

Distance teaching, having the power associated with

industrialization in education, can be a more efficient and effective force for achieving either enhanced learner autonomy or greater control by teachers and educational institutions (Moore, 1986). It is important that we not only design and teach good programs, but that we think, write and argue for learner autonomy. It also is important to ensure that distance education works in the interests of learners, rather than teachers or institutions, and is not used as a means of state control and social direction. Perhaps most importantly, we must play a part in administration and management, which is not always very attractive to persons whose first wish is to be helpers of other people. However, this is very important at this particular time as one generation of administration and managers gives way to another. Distance teaching has become successful. It is important that its management remains in the hands of people who are motivated to serve others, not to serve the machine. In other words, we must be alert to defend those human values that have been the traditional concern of distance educators, especially the values of learner freedom, individualism, and self-direction.

In his study, Rumble (1987) is concerned with the cost efficiency and cost effectiveness of distance education, particularly at the higher education level.

Cost efficiency is concerned with the study of the cheapest means of accomplishing a defined objective, or the means which provide maximum value for a given level of expenditure, assuming that the quality of the output produced by the systems being compared is the same. Cost effectiveness is concerned, not only with the quantity of the output achieved for a given sum of money, but also with the quality of that output.

1. If economics of scale are an objective, you must be sure that you will have sufficient numbers of students in your system, but bring average costs down to a level at which economics of scale begin to be reaped.

2. The variable cost (V) per student in the distance system has to be less than the variable costs per student in the conventional system.

3. The level of investment put into a course can be higher where student numbers are higher (i.e., normally in lower level, introductory courses) similar investment levels cannot be sustained in more specialized courses where student numbers are likely to be fewer.

4. The fact that some courses are not in themselves cost efficient does not mean that the system as a whole is inefficient.

5. Choice of media can affect costs dramatically.

6. The annualized cost on fixed capital in investment is

less the longer courses are presented.

7. The most cost-efficient medium is not necessarily the most cost-effective.

8. Distance teaching is not a cost-efficient way of providing specialized degrees in areas where there are relatively few students.

9. The economics of scale reaped by distance teaching universities are made fairly quickly as student numbers rise, but, by nature of the cost curve, there comes a point at which further increases in student numbers are not matched by significant increases in productivity. Also, if one's variable cost per student is very close to that of a conventional institution, one's chances of becoming cost-efficient are lessened.

It will be clear from what has been said that the results of one economic study are of limited value to another in part because no two systems are the same (nor should they be if they have different objectives and operate in different environments), but also because the rate of technological change is such that a system is planned in the late 1960's and early 1970's and implemented in 1990's. So far as cost effectiveness is concerned, it seems that students can learn from any media, if it's competently used, and if they can have access to it at a time and place that suits them. At

present, distance education universities are inhibited in responding to students rapidly; too many of their processes, e.g. registration, fee collection, and distribution of materials, depend on means of communication that have built-in delay such as the post and the banking system; and too many of the media have to be accessed at a fixed time, and possibly, place (e.g. educational broadcasts, face-to-face tuition). There will always be, of course, some constraints of this kind, but the future undoubtedly lies with the home base.

However, each system will be different and each will need to be costed out in light of the technology available to it, its environment and its market, to see if it is cost-efficient. There is no guarantee that it will be; there is only the possibility that it might be.

CONCLUSION

The Universitas Terbuka needs both to consider a training provision which would be available to part time staff, and to pay closer attention to tutor roles which are not directly related to subject content. Universitas Terbuka should provide tutors with the considerable secretarial and administrative resources they need so that they can communicate effectively with the students and can assist students in organizing their time and energy toward successful completion of their study programs.

An intensive tutorial is beneficial and contributes to academic success because more tutoring results in better student achievement. As indicated by the researcher, face-to-face tutorials play an important role at Universitas Terbuka, especially for students' socialization. However, full face-to-face tutorials are not easily accommodated and are very costly for the institution.

Some factors should be considered for face-to-face tutorials: capacity of potential, actual usage, attitude and, also, related costs. Cost effectiveness is considered not only by the quantity of the output achieved but also by the quality of the output.

As an academic staff member at Universitas Terbuka, and as an administrator, it would be beneficial for the author to study how well the program for the students works; to ascertain whether, by attending the intensive tutorials, students might attain better results in their achievement.

It would be informative to compare the intensive tutorial with the regular tutorial by looking at student achievements in Mathematics I. The theory that face-to-face tutorials are most beneficial both for students and the institution might well be supported by such research.

CHAPTER III

STATEMENT OF THE PROBLEMS

Research questions.

The two central research questions of this study are:

1. What are the major factors that influence students to attend the tutorials?
2. What are the major factors of tutorials that contribute to students learning outcomes?

The subsidiary research questions are :

3. Are the students better able to achieve in Mathematics or IAD if they participate in learning with intensive face-to-face tutorials on campus than if they only study by themselves and attend from face-to-face tutorials only twice a semester;
4. What are the students' perceptions of the quality and quantity of UT tutorials?

Model of Study

This study used the simplicity model of Djalil's (1987) research which was derived from the models used in "Research on Teaching" (Medley 1979; Dunkin & Biddle, 1974; Gage, 1963). The model is shown in Appendix A. The elements of the model were developed from several basic hypotheses (Djalil, 1987) as follows:

1. Good tutoring must be aimed at obtaining optimal learning outcomes, be it academic behaviour, attitude,

- perception or achievement of the students;
2. Certain tutoring behaviours have inwardly the role of creating an effective teaching-learning process aimed at achieving certain learning outcomes;
 3. The student's background and certain motivations are assumed to affect learning outcomes;
 4. Certain preparations made by students before tutorials can be expected to affect learning outcomes;
 5. Feasibility of making use of tutorial services at the Centers affects student learning outcomes.

The limitation of this model is that it is based solely on the assumption that there is a bivariate correlation between independent and dependent variables, without taking into account intercorrelations which might exist between the independent variables themselves. Moreover, the model above is also not meant to test causal relations.

Statement of the Problems

The purpose of this study is to determine whether or not the intensive tutorial results in higher achievement than does the two-times per semester tutorial in the distance learning system in Universitas Terbuka. To achieve this purpose, the following objectives must be satisfied :

1. Surveying the literature concerning face-to-face

tutorial factors in distance education;

2. Obtaining information about students' perceptions of face-to-face tutorials.

HYPOTHESES AND VARIABLES

Following are the hypotheses and the related variables examined :

H1 : The background of UT students correlate positively and significantly with their learning outcomes.

The indicators for the background of UT students in this study are: Age, sex, marital status, occupation, experience at other universities, and journals/books read which are relevant to the study program selected at UT.

The learning outcomes include the following :

1. Rate of attendance of students in tutorials in Economic Statistics/ Management Mathematics/ Statistics I/ Mathematics and Introduction to Basic Science in semester II 1991-1992.

2. Students' ability to grasp the essence of tutorials; and student evaluation of tutorial presentation of material and the advantage of tutorials for the student.

3. Results of the end of semester II examinations in Economic Statistics/ Management Mathematics/ Statistics I/ Mathematics in semester II 1991-1992.

H2 : Academic backgrounds of UT students may affect significantly the students' attendance at tutorials,

levels of satisfaction, perception and results in the end of semester examinations.

There may be a number of reasons which influence the students' attendance of tutorials. Based on this, the next hypothesis to be tested is:

H3 : Reasons that influence students to attend tutorials may correlate positively and significantly with their degrees of attendance in tutorials, levels of satisfaction, perceptions and the results of their examinations.

The reasons given by students for attending tutorials are:

1. To get a direct picture of UT Regional Centers.
2. To know fellow-students.
3. To ask questions about the course.
4. To enhance the spirit of learning.
5. To know how to study independently.
6. To fill the time.
7. Tutorials are a must.
8. To enlarge their knowledge.

H4 : There are significant correlations between distance and time spent; and a decrease in attendance in tutorials, the growth of dissatisfaction and negative perceptions towards tutorials, and a tendency towards negative results in the end of semester examinations.

H5 : There are positive and significant correlations

between reading the module before it is discussed in tutorial and the problems that face UT students with the attendance at tutorials, satisfaction and positive perceptions, and end-of-semester examinations results.

H6 :There are significant correlations between specific tutoring behaviors and attendance at tutorials, satisfaction and positive perception towards tutorial services, and end-of-semester examination results.

Tutorial behaviors are defined as follows:

1. Discuss module outlines;
2. Identify important points;
3. Write a summary of material in the module;
4. Show an effective independent study;
5. Discuss the module intensively;
6. Discuss administrative, academic and student affairs;
7. Discuss errors in the content of modules;
8. Encourage learning;
9. Discuss test/examination items;

H7 : A reduction in the number of problems faced by UT students may increase their attendance at tutorials, improve their satisfaction levels and perceptions towards tutorial services, and lead to better results in end-of-semester examinations.

There are a number of problems which may directly or

indirectly affect the students' learning outcomes. The problems include:

1. A feeling of remoteness;
2. Problems concerning studying independently;
3. Distance from tutorial;
4. Inadequate information about UT;
5. A feeling of being too old;
6. Problems in seeing any progress in one's study;
7. Problems in participating in study groups;
8. Financial problems;
9. Irrelevant background;
10. Constraints caused by one's work;
11. Problems in communicating with UT Regional centers;
12. Family problems; (Djalil, 1987).

It is logical to assume both that those who find tutorial services satisfactory will attend them more often and that more frequent tutorial attendance will improve end-of-semester examination results.

Is the intensive tutorial more effective in terms of test scores earned than either one or two times per semester tutorial or taking no tutorial? If one method proves to be more effective than the others, UT could improve their system of tutorial delivery. Students, thus, would be more successful in their studies.

Significance of the Study.

This study, although limited in scope and depth for many reasons, highlights the need for improvement of face-to-face tutorials in the distance education system at UT. If the results reveal a need for improvement to the system at UT, then this research inquiry may contribute by helping to focus attention on the problem of the face-to-face tutorial system at UT. Although it is an exploratory enquiry, this study may allow UT to improve its facilities in order to achieve its overall goals. This enquiry may lead to an understanding of one aspect of program administration in UT. As a faculty staff member, it is important for the author to assist in improving the distance education system of UT.

Definition of terms:

Tutorials :- An academic support which is defined as any assistance provided in the interpreting and understanding of the learning package. This includes interaction associated with assignments and the provision of course information or promotion, enrollment and re-enrollment information or the provision of a first point of contact in assisting students to interpret and negotiate the administrative requirements of institutions.

Face-to-face Tutorial : Tutorials which provide the student contact or meeting with the tutor.

Distance Education : One of the various forms of study which is not under continuous, immediate supervision of tutors present with their students in a lecture room. It includes all the teaching methods in conducted theory : print, mechanical or electrical devices (Holmberg, 1977).

Universitas Terbuka: An open learning institute in Indonesia where the teaching methods adopted by the Open University allow students to use their capability for self study as well as for group study.

CHAPTER IV

Methodology

This study is a causal-comparative study for improving face-to-face tutorials in distance education in Universitas Terbuka.

The Pilot Study

The questionnaire was piloted and then modified after the pilot study. In the pilot study, 20 (twenty) students who were residents near the UT Regional Centre in Pondok Cabe, Jakarta, were asked to participate. They were randomly chosen to be part of the pilot study.

The students were asked to fill out and comment on each question in the questionnaires which were delivered to their homes. The researcher then collected the questionnaires and analyzed the results.

Although it appeared that the questionnaire in the pilot study was easy to read and to understand, several suggestions were made by the students. Modifications were made on the questions to improve the survey so that it might better achieve its purpose of obtaining students' perceptions of the quality and quantity of UT face-to-face tutorials. In addition, the modifications were aimed at eliminating the effects of translation from English to the Indonesian language and to make sure that each item could be easily read and understood. Consequently, several

questions were deleted to avoid confusion, and several were rewritten to obtain clarity of purpose. Most of the suggestions concerned questions about the use of the telephone as a means of communication, since these questions could not be answered by students in remote areas where telephones are either unavailable or, if available, are expensive to use. Otherwise, the questionnaire was found to be easy to read and to understand.

Sample

The population of the present study included UT students from the faculties of Economics (FEKON), Social Sciences and Politics (FISIP). They were taking Economic Statistics, Management Mathematics, Statistics I, or Mathematics in semester II 1991-1992. All had the opportunity to take part in tutorials.

Generally, it is known that many UT students never attend tutoring sessions. Based on this fact, the decision was made to categorize the subjects into three groups; the grouping of no attendance, twice per semester attendance, and intensive attendance. The sample population was taken from two Regional Centers, Jakarta, and Pontianak, because they have the greatest numbers of students among all the regions which offer the intensive face-to-face tutorial.

Data Collection

Questionnaires were distributed to 1100 students, 550 from Jakarta and 550 from Pontianak. Collection of data was made through questionnaires which were mailed directly to the students and by score data from the Examination Centre of Universitas Terbuka.

The questionnaire used for data collection was modified from those used in studies by Djalil (1987) and Rekkedal (1985), which examined, respectively, the tutorial system of the Open University of Indonesia and the Open University of Norway.

The questionnaire consisted of three parts. The first part consisted of demographic data including the student name, student number, study program, gender, marital status, employment status and highest earned certificate. The second part, about tutorials, included motive for entering UT, motive for participating in tutorials, ease of access to tutorials, preparation before attending tutorials, tutoring behaviour, and student problems. The third part consisted of general comments in the form of open-ended questions.

The study was conducted in the first semester of 1992. The questionnaires were mailed to the students in the middle of July, 1992. A letter was included with the questionnaire to provide information and a rationale for completing the questionnaire. A brief assurance of

confidentiality was included, and also a postage paid return envelope.

The student's scores for the following courses: Economic Statistics, Management Mathematics, Statistics I, and Mathematics in semester II 1991/1992, and Introduction to Basic Science were obtained from the Examination Center.

Data Analysis

Data of this study were analysed by using SPSS/PC+TM 4,0 (Norusis, 1990). Four forms of data analysis were used in this study. The first form, description analysis, was used to describe general information of the research findings. The second form, correlational analysis, used the Pearson Product Moment Correlation to analyze Hypothesis 1 through 7.

Seven groupings of the 60 independent variables were:

1. Student background: 8 variables;
2. Motivation for entering UT: 5 variables;
3. Motivation for participating in tutorials: 11 variables;
4. Ease of access to tutorials: 3 variables;
5. Preparation before attending tutorials: 1 variable;
6. Tutorials behavior: 10 variables; and
7. Student problems: 23 variables.

The dependent variables consisted of :

1. ESSENT was a combination variable consisting of:

TTESSN25 'Can Get the essence of tutorial'

TTINTR26 'Tutor presented the tutorial interestingly'

TTIMPR27 'Tutorial improved your knowledge'

2. **FREQ** was a combination variable consisting of

FRQIAD16 'Frequencies of taking IAD tutorials per semester'

TTIMES19 'Frequencies of taking MATH tutorials per semester'

3. **SCORE** was the student achievement in IAD and in Mathematics semester II 1991/1992. Since the study was new in Indonesia distance education, the level of probability for rejection of the null hypotheses corresponding to hypotheses formulated in the study was set at .05 or less (Djalil, 1987).

The third analysis was a stepwise multiple regression performed between the seven groups of independent variables and the two dependent variables: **ESSENT** and **FREQ** in Mathematics and IAD.

The fourth analysis, an analysis of variance and T - test(least significant differences test), was applied if necessary.

Return rate

There were 588 completed returned questionnaires. The return rate of the present study was 53 %, which is generally considered high for social survey research.

CHAPTER V

RESULTS

This chapter is presented in three parts; first, a description of the students; second, findings regarding the correlational study which were specific to the hypotheses being tested; and third, the results of the regression analyses.

5.1 Descriptive findings

5.1.1 Students' Backgrounds

The students ranged in age from 18 to 56, with a mean age of 26.74 years and a mode of 23 years. The majority were male (74%) and more than half were single (68%) (see appendix D). About 72% were employed, 44% were government employees, 39% were private sector employees, and 5% were self employed.

Of the 588 respondents, 66.3% were from Jakarta Regional Center and 33.7% were from Pontianak Regional Center (see appendix E). Six percent were engaged in Economic and Development study; 50 % of the respondents were studying Management (50.5%); 12% were studying Business Administration; 28.4% were studying Public Administration; and 2.6% were studying Development Administration (see appendix F).

Regarding educational attainment, 62.2% had general Secondary High School (SHS) certificates; 10.4% had

Economic SHS certificates; and 7.3% had Technical SHS certificates. Six percent had diploma certificates, and 6.6% had undergraduate certificates. There were 30.3% who had attended other universities.

5.1.2 Factors motivating tutorial attendance

The four most common reasons or motivating factors for attending tutorial sessions were: 1) to ask about a difficulty in the course (98.1%); 2) to increase knowledge (97%); 3) to improve learning spirit (95%); and 4) to become acquainted with other students (94.8%).

There were five common reasons why the students did not attend the tutorials :1) Not knowing the tutorial schedule (56%; 2) Have no time (51%); 3) Tutorial is not obligatory (48%); 4) others (45.5%); 5) Tutorial location was too far away (41%).

5.1.3 Access to tutorial centers

The distance from a tutorial centre ranged from less than one kilometer to 515 kilometers with a mean distance of 16.8 kilometers. The time spent to go to the tutorial centres ranged from one minute to seven hours with a mean time of 49 minutes.

5.1.4 Preparation before attending tutorial

Only 31% of respondents read the modules before attending tutorial and there were five reasons given for this behavior: 1) the modules are too difficult (45%); 2)

work/job problems (44%); 3) module not yet received (43.7%); 4) can not study independently (41%); 5) have no time to study (40%).

5.1.5 Tutoring behaviours

The five most important tutoring behaviours in the tutorial session were: 1) encouraging the students' spirit to study (91.6%); 2) discussing the main features of modules (90.1); 3) encouraging an intensive discussion (90%); 4) discussing the module page by page (90%); and 5) discussing module mistakes (90%).

5.1.6 Problem faced by UT students

The four most often experienced difficulties that students faced were: 1) difficulty in studying independently (87%); 2) difficulty in knowing own ability in study (76.2%); 3) difficulty in joining study group (74.7%); 4) difficulty in communicating with Regional Centre (62.4%).

5.1.7 Students opinion about tutorial

Half of the 278 respondents could grasp the essence of the tutorial (54%) but only 39% thought that the tutor presented the tutorial in an interesting manner. Half of the respondents thought that the tutorial increased their knowledge (50%).

5.1.8 Students opinion about UT System

Almost all of the respondents offered positive

opinions about the system in Universitas Terbuka [except in response to the statement that UT has given attention/support to their study (43.7%)]. These opinions included: 1) UT modules as one of the methods of distance learning (85%); 2) UT independent assignments as one of the methods of distance learning (78.6%); 3) face-to-face tutorials support their study (78%); 4) tutorials as one method of distance education (75%); 5) use of telephones as a form of communication in distance learning which could help the students feel less isolated (68%); 6) use of telephone for the distance learning system(67%); 7) UT gave sufficient explanations to students (60.7%).

5.2 Learning Outcomes.

There are three classified learning outcomes in this study: They are **FREQ**, **ESSENT** and **SCORE**. **FREQ** is a combination of the **FRQIDA16** variable, that is the frequency of IAD tutorial; and **TTIMES19**, that is the frequencies of tutorial for Mathematics tutorial that the students attended. **ESSENT** is a combination the **TTESSN25** variable of the ability of students to get the essence of tutorial, the **TTINTR26** variable which is the student evaluation of the tutor's presentation of material and the **TTIMPR27** variable that is the advantage of tutorial for the students. **SCORE** is student examination scores on IAD and Math.

5.3 Correlational study.

Research question # 1:

What are the major factors that influence students to attend the tutorial?

Seven sets of correlation matrices (Pearson Product Moment Correlation) were produced using the SPSS program and were used to test the hypotheses. Each correlation matrix included a group of independent variables and a group of dependent variables. The appendices H through N present the results. There were 184 scores of Mathematics and IAD from 588 respondents (see appendix G). For the correlation analysis, the data which contain those scores were used.

5.3.1 Hypothesis 1

The backgrounds of UT students correlate positively and significantly with their learning outcomes.

Table 1 shows summaries of the correlations between student backgrounds and their learning outcomes.

Table 1

Summaries of the correlations between the learning outcomes and student background.

Correlations:	Score	FREQ	ESSENTT
AGE5	.09	-.27 **	-.27 **
SEX6	.08	-.07	-.11
MARSTAT7	.11	-.17	-.19 *
WORK8	-.03	.39 **	.33 **
STTJOB10	.00	-.25 **	-.24 **

N of cases:184 1-tailed Signif: **-.01 ** - .001

Variable labels:

AGE5 'Student age'
SEX6 'Sex'

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MARSTAT7 'Marital Status'
WORK8    'Do you work'
STTJOB10 'Status of your Job'
IAD      'IAD (Introduction to Basic Science) scores'
MATH     'MATH(Management Mathematics) scores'.
FREQ     =FRQIAD16+TTIMES19.
ESSENTT  =TTESSN25 + TTINTR26 + TTIMPR27.
SCORE    =IAD+Math.
FRQIAD16 'Frequencies of taking tutorials per semester'
TTIMES19 'Frequencies of taking the tutorials persemester'
TTESSN25 'Can Get the essence of tutorial'
TTINTR26 'Tutor presented the tutorial interesting'
TTIMPR27 'Tutorial improve your knowledge'

```

Student examination scores showed small correlations with the following variables: student age ($r=.09$), gender ($r=.08$), marital status ($r=.11$) at $p<.05$. These correlations mean that older students, married students, and male students appeared to have slightly higher examination scores.

'Frequencies of attending tutorial' had significant correlations with the following variables: student age ($r= -.27$, $p<.001$), and working ($r=.39$, $p<.001$). These indicate that younger and non-working students more often attended tutorials. Furthermore, frequency of attending tutorials had small negative correlations with the following variables: gender ($r= -.06$, $p<.05$), marital status ($r= -.16$, $p<.05$), and job status ($r= -.17$, $p< .01$). These correlations may be interpreted to indicate that female students, unmarried students, and full-time working students seemed to be attending the tutorial.

'Grasping the essence of the tutorial' showed

significant correlations with the following variables: student age ($r = -.27$, $p < .001$); working ($r = .33$, $p < .001$); and job status ($r = -.24$, $p < .001$). These correlations indicate that younger students, unemployed students, and full-time working students could get more of the essence of the tutorial. Moreover, getting the essence of the tutorial had small correlations with the following variables: gender ($r = -.11$, $p < .05$); marital status ($r = -.19$, $p < .01$); job ($r = -.11$, $p < .05$); and study program ($r = -.17$, $p < .05$). This can be interpreted as indicating that female students, unmarried students, and full-time working students received more of the essence of tutorial.

It can be concluded that hypothesis 1 was supported by the data.

Hypothesis 2: Academic backgrounds of UT students may significantly affect attendance at tutorials, getting the essence of tutorials and end-of-semester examination results.

Table 2 shows summaries of the correlations between the reasons for becoming UT students and learning outcomes.

Table 2
Summaries of the correlations between the score, frequencies of tutorial, essence of tutorial and student academic background .

Correlations:	SCORE	FREQ	ESSENTT
OTHUNI12	.09	.12	.03
N of cases:	184	1-tailed Signif:	* - .01 ** - .001

Variable Labels:

OTHUNI12 'Study in other University before'
 IAD 'IAD (Introduction to Basic Science) scores'
 MATH 'MATH (Management Mathematics) scores'.
 FREQ = FRQIAD16+TTIMES19.
 ESSENTT = TTESSN25 + TTINTR26 + TTIMPR27.
 SCORE = IAD+Math.
 FRQIAD16 'Frequencies of taking tutorials per semester'
 TTIMES19 'Frequencies of taking the tutorials persemester'
 TTESSN25 'Can Get the essence of tutorial'
 TTINTR26 'Tutor presented the tutorial interesting'
 TTIMPR27 'Tutorial improve your knowledge'

Students' examination scores showed small correlations with study in other universities ($r=.08$, $p<.05$). This can be interpreted as indicating that students who study in other universities seemed to have slightly higher examination scores.

'Frequencies of attending tutorial' showed a small significant correlation with study in other university ($r=.11$, $p<.05$). This means that students who have studied in other universities attend the tutorial more frequently.

Hypothesis 3: Reasons which encourage students to attend tutorials may correlate positively and significantly with their frequency of attendance in tutorials, getting the essence of tutorial and examination results.

Table 3 shows summaries of the correlations between students' reasons for attending tutorial and their learning outcomes.

Table 3

Summaries of the correlations between the score, frequencies of tutorial, essence of tutorial and purpose

of student in attending tutorial .

Correlations:	SCORE	FREQ	ESSENTT
RSKNUT23	-.03	.72 **	.88 **
RSNACQ23	-.05	.76 **	.91 **
RSNDIF23	-.04	.74 **	.92 **
RSNIPR23	-.04	.75 **	.91 **
RSNIND23	-.03	.74 **	.87 **
RSNFIL23	-.08	.65 **	.74 **
RSNOBL23	-.03	.66 **	.85 **
RSNKNO23	-.05	.75 **	.91 **
RSNCOM23	-.03	.75 **	.92 **
RSNSLV23	-.04	.71 **	.87 **
KNOWTT23	-.02	.74 **	.88 **

N of cases: 184 1-tailed Signif: * -.01 ** -.001

Variable labels:

RSKNUT23 'To know more abouts UT and the Regional Centre'
 RSNACQ23 'Become acquainted with other students'
 RSNDIF23 'To ask some difficulty in the course'
 RSNIPR23 'To improve the learning spirit'
 RSNIND23 'To know better about independent learning'
 RSNFIL23 'To fill empty time'
 RSNOBL23 'Tutorial as an obligation'
 RSNKNO23 'to add knowledge'
 RSNCOM23 'to communicate with Tutor'
 RSNSLV23 'To solve the problem in modules'
 KNOWTT23 'To know more about tutorials'
 IAD 'IAD (Introduction to Basic Science) scores'
 MATH 'MATH(Management Mathematics) scores'.
 FREQ = FRQIAD16+TTIMES19.
 ESSENTT = TTESSN25 + TTINTR26 + TTIMPR27.
 SCORE = IAD+Math.
 FRQIAD16 'Frequencies of taking tutorials per semester'
 TTIMES19 'Frequencies of taking the tutorials per semester'
 TTESSN25 'Can grasp the essence of tutorial'
 TTINTR26 'Tutor presented the tutorial interesting'
 TTIMPR27 'Tutorial improve your knowledge'

Students' examination scores showed negative correlations with "to make acquaintance with other students" ($r = -.05$, $p < .05$) and "to fill empty time" ($r = -.07$, $p < .05$). These correlations indicate that the students who attend tutorials in order to make

acquaintance with other students and to fill empty time seemed to have lower examination scores.

'Frequencies of attending tutorial' had high significant correlation with these variables:

- to know better about UT and the Regional Centre (r=.71, p<.001);
- to make acquaintance with other students (r=.76 , p<.001);
- to ask about some difficulty in the course (r=.73 , p<.001);
- to improve the learning spirit (r=.74 , p<.001);
- to know more about independent learning (r=.73, p<.001);
- to fill empty time (r=.65 , p<.001);
- tutorial as an obligation (r=.66 , p<.001);
- to add knowledge (r=.74);
- to communicate with tutor (r=.74 , p<.001);
- to solve a problem in the modules (r=.70 , p<.001); and
- to know more about tutorials (r=.74 , p<.001).

This means that the following reasons for attending the tutorial influenced the students to attend tutorials more often:

- to know better about UT and the Regional Centre;
- become acquainted with other students;
- to ask about some difficulty in the course;

- to improve the learning spirit;
- to know better about independent learning;
- to fill empty time;
- tutorial as an obligation;
- to add knowledge;
- to communicate with tutor;
- to solve the problem in modules;
- to know better about tutorials.

'Grasping the essence of tutorial' showed high significant correlations with these variables:

- to know better about UT and the Regional Centre ($r=.88$, $p<.001$);
- become acquainted with other students ($r=.91$, $p<.001$);
- to ask about some difficulty in the course ($r=.92$, $p<.001$);
- to improve the learning spirit ($r=.91$, $p<.001$);
- to know more about independent learning ($r=.87$, $p<.001$);
- to fill empty time ($r=.74$, $p<.001$);
- tutorial as an obligation ($r=.85$, $p<.001$);
- to add knowledge ($r=.91$, $p<.001$);
- to communicate with tutor ($r=.91$, $p<.001$);
- to solve the problem in the modules ($r=.87$, $p<.001$); and
- to know more about tutorials ($r=.88$, $p<.001$).

This can be interpreted to indicate that the student

with the following reasons for attending the tutorial would be better able get the essence of the tutorial:

- to know better about UT and the Regional Center;
- become acquainted with other students;
- to ask about some difficulty in the course;
- to improve the learning spirit;
- to know better about independent learning;
- to fill empty time;
- tutorial as an obligation;
- to add knowledge;
- to communicate with tutor;
- to solve a problem in the modules; and
- to know more about the tutorials.

It can be concluded that hypothesis 3 was supported by the data.

Hypothesis 4 : There are significant correlations between the distance and the time spent, and the decrease of attendance in tutorials, the growth of dissatisfaction and negative perception towards tutorials and then a tendency towards negative end-of-semester examination results.

Table 4 shows summaries of the correlations between student travel time, distance and negative perception towards tutorial, and learning outcomes.

Variable labels:

TTDIST21 'The distance from your place to tutorial place'
 TTTIME22 'The time you needed to go to tutorial place'
 TTFEE31 'Tutorial fee'
 DSCMDL24 'Discuss the main feature of modules'
 IDENEX24 'Identify the points which might be in the exam'

RESMDL24 'Make summary from materials in modules'
 SHWNDE24 'Show how to do independent learning'
 INTDSC24 'Encourage intensive discussion'
 DSCACD24 'Discuss about academic, administration and student facility'
 DSCADL24 'Discuss modules mistakes'
 DSCMDM24 'Discuss the modules page by page'
 HISPRT24 'Encourage the high spirit to study'
 DSCEXA24 'Discuss the last exams test'
 MATH 'MATH(Management Mathematics) scores'.
 FREQ = FRQIAD16+TTIMES19.
 ESSENTT = TTESSN25 + TTINTR26 + TTIMPR27.
 SCORE = IAD+Math.
 FRQIAD16 'Frequencies of taking tutorials per semester'
 TTIMES19 'Frequencies of taking the tutorials per semester'
 TTESSN25 'Can get the essence of tutorial'
 TTINTR26 'Tutor presented the tutorial interesting'
 TTIMPR27 'Tutorial improve your knowledge'

Table 4

Summaries of the correlations among distance, time spent travelling, the decrease in tutorial frequency, and learning outcome

Correlations:	SCORE	FREQ	ESSENTT
TTDIST21	.00	.23 **	.19 *
TTTIME22	.03	.35 **	.51 **
TTFEE31	-.04	.65 **	.66 **
DSCMDL24	-.04	.74 **	.91 **
IDENEX24	-.07	.72 **	.87 **
RESMDL24	-.05	.74 **	.92 **
SHWNDE24	-.03	.73 **	.92 **
INTDSC24	-.04	.77 **	.94 **
DSCACD24	-.05	.71 **	.86 **
DSCADL24	-.04	.72 **	.91 **
DSCMDM24	-.04	.75 **	.90 **
HISPRT24	-.02	.75 **	.94 **
DSCEXA24	-.06	.77 **	.90 0**

N of cases: 184 1-tailed Signif: * -.01 ** -.001

Students' examination scores had negative correlations with the following variables: identify the points which might be in the exam ($r = -.07$, $p < .05$); discuss academic, administration and student facilities

($r = -.05$, $p < .05$), and discuss the last exam ($r = -.06$, $p < .05$). This can be interpreted to indicate that the student who has the following reasons to attend the tutorial had lower examination scores:

- to identify the points that might be in the exam;
- to discuss academic, administration and student facilities; and
- to discuss the last exam test.

'Frequencies of attending tutorial' had a significant correlation ($p < .001$) with these variables:

- the distance from your place to the tutorial place ($r = .23$);
- the time needed to go to the tutorial place ($r = .35$);
- tutorial fee ($r = .65$);
- discuss the main feature of modules ($r = .74$);
- identify the points which might be in the exam ($r = .72$);
- make summary from materials in modules ($r = .74$);
- show how to do independent learning ($r = .72$);
- encourage intensive discussions ($r = .77$);
- discuss about academic, administration and student facilities ($r = .70$);
- discuss module mistakes ($r = .72$);
- discuss the module page by page ($r = .75$);
- encourage the high spirit to study ($r = .75$); and
- discuss the last exam ($r = .76$).

This means that the following reasons for attending tutorial encourage the student to attend the tutorial:

- the distance to the tutorial;
- the length time to the tutorial;
- more fees for tutorial;
- discuss the main feature of modules;
- identify the points which might be in the exam;
- make summary from materials in modules;
- show how to do independent learning;
- encourage intensive discussion;
- discuss about academic, administration and student facilities;
- discuss module mistakes;
- discuss the module page by page;
- encourage the high spirit to study; and
- discuss the last exam

'Grasping the essence of tutorial' showed high significant correlations with the following variables:

- the distance from student home to tutorial location (r=.19 , p< .01);
- the time student needed to go to tutorial location (r=.51 , p< .001);
- tutorial fee (r=.66 , p< .001);
- discuss the main feature of module (r= .91);
- identify the points which might be in the exam (r=.87);

- make summary from materials in module (r= .92);
- show how to do independent learning (r= .92);
- encourage intensive discussions (r= .94);
- discuss about academic, administration and student facilities (r= .85);
- discuss module mistakes (r= .91);
- discuss the module page by page (r= .90);
- encourage the high spirit to study (r= .94); and
- discuss the last exam (r= .90) at $p < .001$.

This means that the student who had the following reasons for attending tutorial would be better able to grasp the essence of the tutorial.

- longer distance to tutorial location;
- more time needed to go to tutorial location;
- more fee for tutorial;
- discuss the main feature of module;
- identify the points which might be in the exam;
- make summary from materials in module;
- show how to do independent learning;
- encourage intensive discussions;
- discuss about academic, administration and student facilities;
- discuss module mistakes;
- discuss the module page by page;
- encourage the high spirit to study; and

- discuss the last exam.

It can be concluded that hypothesis 4 was supported by the data.

Hypothesis 5 : There are positive and significant correlations between reading the module first before it is discussed in tutorial, and attendance at tutorials, positive perceptions of tutorial and end-of-semester examination results.

Table 5 shows summaries of the correlations between reading the module first before it is discussed in tutorial, and attendance at tutorials, positive perceptions of tutorials and learning outcomes.

Table 5

Summaries of the correlations between reading the module first before it is discussed in tutorial, and attendance at tutorials, positive perceptions of tutorials and learning outcomes.

Correlations:	SCORE	FREQ	ESSENTT
READ14	.07	.01	-.02
STFISO34	-.09	-.08	-.03
STINDN34	-.10	.07	.08
TTFAR34	-.05	-.14	-.10
NOSPRT34	.06	-.01	-.04
TOOLD34	.01	-.02	-.03
DFSELF34	-.06	-.07	-.03
DFGROP34	-.03	-.21 *	-.12
FUNPRB34	-.02	.03	.00
BCGRNT34	.03	.02	.097
DIFJOB34	-.01	-.27 **	-.27 **
DIFCOM34	-.01	-.12	-.02
FAMPRB34	.01	-.01	-.00
DIFOTH34	.01	.02	.07
UTTMTD35	.02	-.03	.02

N of cases: 184 1-tailed Signif: * - .01 ** - .001

Variable labels:

READ14 'Read an article/book connected with your study'

STFISO34 'Feel isolated'
 STINDN34 'Difficult to study independently'
 TTFAR34 'Far away from Tutorial place'
 NOSPR34 'Have not enough support from UT'
 TOOLD34 'Feel to old'
 DFSELF34 'Difficult to know self ability in study'
 DFGROP34 'Difficult to joint study group'
 FUNPRB34 'Funding problem'
 BCGRNT34 'My back ground not supported the course'
 DIFJOB34 'Difficulty with my job'
 DIFCOM34 'Difficult to communicate with the Regional center'
 FAMPRB34 'Family problem'
 DIFOTH34 'Other'
 MATH 'MATH(Management Mathematics) scores'.
 FREQ = FRQIAD16+TTIMES19.
 ESSENT = TTESSN25 + TTINTR26 + TTIMPR27.
 SCORE = IAD+Math.
 FRQIAD16 'Frequencies of taking tutorials per semester'
 TTIMES19 'Frequencies of taking the tutorials persemester'
 TTESSN25 'Can Get the essence of tutorial'
 TTINTR26 'Tutor presented the tutorial interesting'
 TTIMPR27 'Tutorial improve your knowledge'

Student examination scores showed positive correlations with the following variables:

- read a book connected to the study ($r=.07$, $p<.05$); and
- have not enough support from UT ($r= .06$, $p<.05$);

Student examination scores showed negative correlations with the following variables:

- feel isolated ($r=-.09$, $p<.05$);
- difficult to study independently ($r= -.09$ $p<.05$);
- far away from tutorial place ($r= -.05$, $p<.05$);
- difficult to know self ability in study ($r= -.06$, $p<.05$).

This means that students who have the following problems:

- feel isolated;

- difficult to study independently;
- far away from tutorial place; and
- difficult to know self ability in study

seemed to have lower examination scores. Interestingly, students who stated that they have problems with 'read a book connected to the study' and 'not having enough support from UT seemed to have higher examination scores.

'Frequency of attending tutorial' showed significant correlation with the following variables :

- feel isolated ($r = -.08$, $p < .05$);
- difficult to study independently ($r = .07$, $p < .05$);
- far away from tutorial place ($r = -.14$, $p < .05$);
- difficult to know self ability in study ($r = -.07$, $p < .05$);
- difficult to join study group ($r = -.21$, $p < .05$);
- difficulty with my job ($r = -.27$, $p < .05$); and
- difficult to communicate with the Regional center ($r = -.19$, $p < .05$).

This can be interpreted to indicate that students who have the following problems:

- feel isolated;
- far away from tutorial location;
- difficult to know self ability in study;
- difficult to joint study group;
- difficulty with my job; and
- difficult to communicate with the Regional center

seemed to attend tutorials less often. However, students who stated that it was difficult to study independently seemed to attend the tutorial more often.

'Grasping the essence of the tutorial' showed significant correlations with the following variables:

- difficult to study independently ($r=.08$, $p<.05$);
- my background did not support the course ($r=.10$, $p<.05$);
- other ($r=.07$, $p<.05$);
- far away from tutorial location ($r= -.10$, $p<.05$);
- difficult to join study group ($r= -.12$, $p<.05$); and
- difficulty with my job ($r=-.27$, $p<.05$).

This means that students who have the following reasons:

- difficult to study independently;
- my background not supported the course; and
- other reasons

seemed to be able to grasp the essence of the tutorial.

Furthermore, students who stated the following:

- far away from tutorial location;
- difficult to join study group; and
- difficulty with my job

seemed to be less able to grasp the essence of the tutorial.

It can be concluded that hypothesis 5 was supported by the data.

Hypothesis 6 : There are significant correlations between specific tutoring behaviours and attendance at tutorials, positive perceptions towards tutorial services and learning outcomes.

Table 6 shows summaries of the correlation between specific tutoring behaviour, and attendance at tutorials, positive perceptions of tutorial and learning outcomes.

Variable labels

UTTMTD35 'Categorizing UT tutorial as a distance learning method'
 UTMDL36 'Categorizing UT modules as a distance learning method'
 UTASGN37 'Categorizing UT assignment as a distance learning method'
 UTEXPL38 'Enough support explanation from UT'
 UTSERV39 'Despite tutorial, has UT given enough support for your study'
 USETLP40 'Using the telephone as a distance learning system'
 TLPISO41 'Using telephone reduces isolation feeling'
 TTSPRT42 'Tutorial face-to-face support your study'
 MATH 'MATH(Management Mathematics) scores'.
 FREQ = FRQIAD16+TTIMES19.
 ESSENTT = TTESSN25 + TTINTR26 + TTIMPR27.
 SCORE = IAD+Math.
 FRQIAD16 'Frequencies of taking tutorials per semester'
 TTIMES19 'Frequencies of taking the tutorials per semester'
 TTESSN25 'Can get the essence of tutorial'
 TTINTR26 'Tutor presented the tutorial interestingly'
 TTIMPR27 'Tutorial improves your knowledge'

Table 6

Summaries of the correlations between specific tutoring behaviour, and attendance at tutorials, positive perceptions of tutorial and learning outcomes.

	Correlations: SCORE	FREQ	ESSENTT
UTTMTD35	.02	-.03	.02
UTMDL36	.08	-.04	-.06
UTASGN37	-.05	.05	.00
UTEXPL38	-.03	-.11	-.11
UTSERV39	.11	.13	.16
USETLP40	.08	-.18 *	-.06
TLPISO41	.11	-.23 **	-.16
TTSPRT42	.06	.35 **	.26 **

N of cases: 184 1-tailed Signif: * - .01 ** - .001

Students' examination scores showed positive

significant correlations with the following variables:

- categorizing UT modules as a distance learning method (r=.08 ,p< .05);
- categorizing UT assignments as a distance learning method (r=-.05 ,p< .05);
- using the telephone as a distance learning method (r= .07 ,p< .05); and
- face-to-face tutorial support your study (r= .06, p< .05).

This means that students who had these opinions:

- categorizing UT module as a distance learning method;
- using the telephone as a distance learning method; and
- face-to-face tutorial support your study

had higher examination scores. Furthermore, students who categorized UT assignments as a distance learning method had lower examination scores.

'Frequency of attending tutorial' showed significant correlations with the following variables :

- categorizing UT assignments as a distance learning method (r= .05 ,p< .05);
- enough support explanation from UT (r=-.11 ,p< .05);
- besides the tutorial, has UT given enough support for your studies (r=.13 ,p< .05);
- face-to-face tutorial support your studies (r=.35, p< .001)

- using the telephone as a distance learning system ($r = -.18$, $p < .01$); and
- using telephone reduces feelings of isolation ($r = -.23$, $p < .001$).

The results suggest that students who held the following views seemed to attend the tutorial most often:

- categorizing UT assignments as an effective distance learning method;
- enough support explanation from UT;
- besides tutorials, UT has given enough support for their study; and
- face-to-face tutorials support their study.

Students who held the following views:

- using the telephone as a distance learning system;
 - using the telephone reduces feelings of isolation
- seemed to attend the tutorials less frequently.

'Grasping the essence of the tutorial' showed significant correlations with the following variables:

- categorizing UT modules as an effective distance learning method ($r = -.06$, $p < .05$);
- enough support explanation from UT ($r = -.11$, $p < .05$);
- beside tutorials, UT has given enough support for your study ($r = .16$, $p < .05$);
- using the telephone as a distance learning system ($r = -.06$, $p < .05$);

- using telephone reduces isolation feelings ($r = -.16$, $p < .05$); and
- face-to-face tutorials support your studies ($r = .26$, $p < .05$).

This indicates that students who have the opinions that, besides the tutorial, UT has given enough support for study and face-to-face tutorial support seemed to grasp the essence of the tutorial.

As well, students who gave the following opinions seemed less able to grasp the essence of the tutorial:

- categorizing UT modules as a distance learning method;
- enough support explanation from UT;
- using the telephone as a distance learning system; and
- using telephone reduces isolation feeling.

Hypothesis 7 : A decrease in the number and the severity of problems faced by UT students may increase their attendance at tutorials, improve their perceptions towards tutorial services and improve end-of-semester examination results.

Table 7 shows summaries of the correlations between UT service improvement and student perceptions of tutorial and learning outcomes.

Table 7

Summaries of the correlations between student perceptions of tutorial and learning outcomes.

Correlations:	SCORE	FREQ	ESSENTT
DIFNTM32	-.02	.66 **	.83 **

table continuous ...

Correlations:	SCORE	FREQ	ESSENTT
DIFSTD32	-.02	.71 **	.82 **
DIFMDL32	-.04	.67 **	.84 **
DFHEST32	-.05	.73 **	.87 **
DFFAM32	-.04	.73 **	.91 **
DFHELT32	-.04	.75 **	.90 **
DFWORK32	-.02	.74 **	.88 **
DFMDL32	-.02	.68 **	.84 **

N of cases: 184 1-tailed Signif: * - .01 ** - .001

Variable labels:

DIFNTM32 'The problem no time to study'
DIFSTD32 'The problem cannot study independently'
DIFMDL32 'The problem modules not yet received'
DFHEST32 'The problem hesitate to study because too much material'
DFFAM32 'Family problem'
DFHELT32 'Health problem'
DFWORK32 'Work problem'
DFMDL32 'The modules are too difficult'
MATH 'MATH(Management Mathematics) scores'.
FREQ = FRQIAD16+TTIMES19.
ESSENTT = TTESSN25 + TTINTR26 + TTIMPR27.
SCORE = IAD+Math.
FRQIAD16 'Frequencies of taking tutorials per semester'
TTIMES19 'Frequencies of taking the tutorials persemester'
TTESSN25 'Can get the essence of tutorial'
TTINTR26 'Tutor presented the tutorial interesting'
TTIMPR27 'Tutorial improve your knowledge'

Students' examination scores had correlations with 'the problem hesitate to study because too much material' ($r = -.05$, $p < .05$). This means that students who had this problem seemed to have lower examination scores.

'Frequencies of attending tutorial' had high significant correlations with these variables:

- no time to study ($r = .66$, $p < .05$);
- cannot study independently ($r = .71$, $p < .05$);
- module not yet received ($r = .67$, $p < .05$);

- hesitate to study because too much material ($r=.73$, $p<.05$);
- family problem ($r= .73$, $p<.05$);
- health problem ($r= .75$, $p<.05$);
- work problem ($r= .74$, $p<.05$); and
- the modules are too difficult ($r= .68$, $p<.05$).

This means that students with the following problems seemed to attend the tutorial less frequently:

- no time to study;
- cannot study independently;
- module not yet received;
- hesitate to study because too much material;
- family problem;
- health problem;
- work problem;
- the modules are too difficult.

'Grasping the essence of the tutorial' had high significant correlations with the following problems:

- no time to study ($r= .83$, $p<.05$);
- cannot study independently ($r= .82$, $p<.05$);
- module not yet received ($r= .84$, $p<.05$);
- hesitate to study because too much material ($r= .87$, $p<.05$);
- family problem ($r= .91$, $p<.05$);
- health problem ($r= .90$, $p<.05$);

- work problem ($r=.88$, $p<.05$); and
- the modules are too difficult ($r= .84$, $p<.05$)

This can be interpreted as indicating that students with the following problems grasped less of the essence of the tutorial:

- no time to study;
- cannot study independently;
- module not yet received;
- hesitate to study because too much material;
- Family problem;
- health problem;
- work problem; and
- the modules are too difficult.

It can be concluded that hypothesis 7 was supported by the data

5.3.2 Regression Analysis.

Research question # 2:

What are the major factors of the tutorial that contribute to student learning outcomes?

Regression analyses are a set of statistical techniques that allow one to assess the relationship between one dependent variable and several independent variables (Tabanich, 1989).

Stepwise regression was used in this study. In stepwise regression, the equation starts out simply, and the independent variables (IVs) are added one at a time if

they meet statistical criteria, but they may also be deleted at any step where they no longer contribute significantly to regression.

The results of stepwise regression analysis are reported separately, first for IAD and then for MATH, with each dependent variable: ESSENT, FREQ, IAD and MATH.

5.3.2.1 Regression analysis on IAD.

The results of stepwise regression analysis for each step of the independent variables entered the equation with ESSENT as a dependent variable on students IAD achievement are reported in Table 8. The table includes information about multiple regression R, R square, adjusted R square, and F test which shows that the multiple regression is significantly not equal to zero.

Table 8

Summary of stepwise regression analysis of tutorial essence for the students and student background; motivation for entering UT; ease of access to tutorial; motivation to attend tutorial; tutoring behavior; student preparation to tutorial, and student difficulties analysis on the IAD achievement of 142 students.

Variable entered....	<u>R</u>	<u>R</u> square	Adj <u>R</u> square	<u>F</u>
1 INTDSC24	.9340	.8724	.8714	950.493
2 DFFAM32	.9490	.9005	.8991	624.876
3 TTDIST21	.9532	.9085	.9065	453.915
4 SHWNDE24	.9559	.9138	.9113	360.649
5 DIFJOB34	.9586	.9190	.9160	306.528
6 HISPRT24	.9604	.9224	.9190	265.752
7 UTEXPL38	.9617	.9249	.9210	234.247
64 RSNDIF23	.9786	.9576	.9220	26.860

p< .05

Variable:

INTDSC24 Encourage an intensive discussion
 DFFAM32 Family problem
 TTDIST21 The distance from your place
 SHWNDE24 Show how to do independent learning
 DIFJOB34 Difficulty with my job
 HISPRT24 Encourage the high spirit to study
 UTEXPL38 Enough support explanation from UT
 RSNDIF23 To ask some difficulty in the course

The summary of the variables in the equation at the end of the stepwise procedure analysis is presented in Table 9. It displays the multiple regression R , R square, change in R , the semi partial correlation (square sr) the unstandardized regression coefficient (B) and intercept, the standardized regression coefficient (beta), and F test.

It can be seen from Table 8 that R was significantly different from zero at the end of each step. Addition of each variable to the equation resulted in a significant increment in R square. After step 64 with all IVs in the equation, $R = .979$, $F(64,76) = 26,86$, $p < .01$.

Table 9.

Summary of variables in the equation from the stepwise regression analysis on IAD achievement.

Variable entered no.	R	R square	Change in R	sr sq (unique)	B	Beta	F
1 INTDSC24	.9340	.8724	.8714	.8724	.827198	.328337	950.493
2 DFFAM32	.9490	.9005	.8991	.0282	.555565	.096144	39.072
3 TTDIST21	.9532	.9085	.9065	.0080	.006569	.074726	12.043
4 SHWNDE24	.9559	.9138	.9113	.0053	.376374	.144536	8.303
5 DIFJOB34	.9586	.9190	.9160	.0052	-.506221	.069290	8.675

table continous ...

Variable entered no.	<u>R</u>	<u>R</u> square	Change in <u>R</u>	sr sq (unique)	<u>B</u>	Beta	<u>F</u>
6 HISPRT24	.9604	.9224	.9190	.0034	.947949	.377858	5.930
7 UTEXPL38	.9617	.9249	.9210	.0025	.101758	.010536	4.430
64 RSNDIF23	.9786	.9576	.9220	.0327	.034735	.014681	1.029

p<.05

Only eight of a total of 64 independent variables (IVs) contributed significantly to grasp the essence of tutorial on the IAD achievement. The eight variables were INTDSC24, DFFAM32, TTDIST21, SHWNDE24, DIFJOB34, HISPRT24, UTEXPL38 (see Table 8 and 9). These variables were positively related to "grasping the essence of tutorial" ($R = .979$). The additive combination of the eight variables accounted for 95.8% (\underline{R} square = 0.958) of the variance of students grasping the essence of tutorial on IAD.

The variable "encourage an intensive discussion" (INTDSC24) made the highest contribution to predicting the variability in student grasping the essence of tutorial, accounting for 87.2% (\underline{sr} square = .872). The variable "family problem" (DFFAM32) accounted for 5.8%, whereas the other variables accounted for less than 1% of the explained variables on students grasping the essence of tutorial (see the results on Table 9). These findings indicate that "encourage an intensive discussion" was the best predictor among the other significant predictors.

The results of stepwise regression analysis for each

step of the independent variables entered the equation with FREQ as the dependent variable are shown in Table 10. The table includes information about multiple regression R, R square, adjusted R square, and F test, which shows that the multiple regression is significantly not equal to zero.

Table 10.

Summary of stepwise regression analysis of frequencies of tutorial and student background; motivation for entering UT; ease of access to tutorial; motivation to attend tutorial; tutoring behavior; student preparation for tutorial, and student difficulties analysis on the IAD achievement of 142 students.

Variable entered....	<u>R</u>	<u>R</u> square	Adj <u>R</u> square	<u>F</u>
1 DSCEXA24	.7757	.6018	.5989	210.156
2 REGCENT3	.8019	.6430	.6378	124.335
3 WORK8	.8269	.6838	.6769	98.809
4 TTFEE31	.8389	.7038	.6951	80.841
5 DIFCOM34	.8512	.7245	.7143	71.041
6 TTDIST21	.8610	.7413	.7297	64.031
7 TTSVRT42	.8690	.7552	.7423	58.634
8 TLPISO41	.8777	.7704	.7565	55.406
9 BCGRNT34	.8832	.7800	.7649	51.641
10 RSNIND23	.8869	.7866	.7702	47.949
64 RSNDIF23	.9277	.8606	.7433	7.336

p < .05

Variable

DSCEXA24 Discuss the last exams test
 REGCENT3 Regional Centre
 WORK8 Do you work
 TTFEE31 Tutorial fee
 DIFCOM34 Difficult to communicate with the Regional Center
 TTDIST21 The distance from your place
 TTSVRT42 Tutorial face-to-face support your study
 TLPISO41 Using telephone reduces isolation feeling
 BCGRNT34 My back ground not supported the course
 RSNIND23 To know better about independent learning

RSNDIF23 To ask about some difficulty in the course

The summary of the variables in the equation at the end of the stepwise procedure analysis is presented in Table 11. It displays the multiple regression R , R square, change in R , the semi partial correlation (square sr) the unstandardized regression coefficient (B) and intercept, the standardized regression coefficient (beta), and F test.

Table 11.

Summary of variables in the equation from the stepwise regression analysis on IAD achievement.

Variable entered no.	R	R square	Change in R	sr sq (unique)	B	Beta	F
1 DSCEXA24	.7757	.6018	.5989	.6018	.595242	.540813	210.156
2 REGCENT3	.8019	.6430	.6378	.0412	.398252	.083959	15.940
3 WORK8	.8269	.6838	.6769	.0408	.624329	.123917	17.693
4 TTFEE31	.8389	.7038	.6951	.0200	.002098	.125283	9.202
5 DIFCOM34	.8512	.7245	.7143	.0207	-.283976	-.092125	10.134
6 TTDIST21	.8610	.7413	.7297	.0168	.004764	.126490	8.710
7 TTSPRT42	.8690	.7552	.7423	.0139	.474626	.214088	7.534
8 TLPISO41	.8777	.7704	.7565	.0153	-.153000	-.092878	8.788
9 BCGRNT34	.8832	.7800	.7649	.0096	-.422907	-.113916	5.711
10 RSNIND23	.8869	.7866	.7702	.0066	.240363	.208431	4.018
64 RSNDIF23	.9277	.8606	.7433	.0740	-.713222	-.703677	.747

$p < .05$

It can be seen from Table 10 that R was significantly different from zero at the end of each step. Addition of each variable to the equation resulted in a significant increment in R square. After step 64 with all IVs in the equation, $R = .928$, $F(64,76) = 7.34$, $p < .01$.

Only eleven of a total of 64 independent variables

(IVs) contributed significantly to frequencies to attend the tutorial on the IAD achievement. The eleven variables were DSCEXA24, REGCENT3, WORK8, TTFEE31, DIFCOM34, TTDIST21, TTSPRT42, TLPISO41, BCGRNT34, RSNIND23, RSNDIF23 (see Table 10 and 11). These variables were positively related to frequencies of tutorial ($R = .928$). The additive combination of the eight variables accounted for 86.16% (R square = .8616) of the variance of students frequency in attending the tutorial.

The variable "discuss the last exam" (DSCEXA24) made the highest contribution to predicting the variability in frequencies of attending the tutorial, accounting for 60.2% (sr square = .602). The variable "regional center" (REGCENT3), accounted for 4.1%, whereas the other variables accounted for less than 1% of the explained variables on students' frequency in attending the tutorial (see the results in Table 11). These findings indicate that "discuss the last exam" was the best predictor among the other significant predictors.

The results of stepwise regression analysis for each step of the independent variables entered the equation with IAD as a dependent variable are shown in Table 12. The table includes information about multiple regression R , R square, adjusted R square, and F test which shows that the multiple regression is significantly not equal to

zero.

Table 12.

Summary of stepwise regression analysis of students IAD achievement and student background; motivation for entering UT; ease of access to tutorial; motivation to attend tutorial; tutoring behavior; student preparation for tutorial, and student difficulties analysis on the IAD achievement of 142 students.

Variable entered....	<u>R</u>	<u>R</u> square	Adj <u>R</u> square	<u>F</u>
1 MARSTAT7	.1799	.0324	.0254	4.650
65 RSNDIF23	.5412	.2929	-.3192	.479

p< .05

MARSTAT7 Marital Status

RSNDIF23 To ask about some difficulty in the tutorial

The summary of the variables in the equation at the end of the stepwise procedure analysis is presented in Table 13. It displays the multiple regression R, R square, change in R, the semi partial correlation (square sr) the unstandardized regression coefficient (B) and intercept, the standardized regression coefficient (beta), and F test.

Table 13.

Summary of variables in the equation from the stepwise regression analysis on IAD achievement.

Variable xentered no.	<u>R</u>	<u>R</u> square	Change in <u>R</u>	sr sq (unique)	<u>B</u>	Beta	<u>F</u>
1 MARSTAT7	.1799	.0324	.0254	.0324	.125832	.090760	4.650
65 RSNDIF23	.5412	.2929	-.3192	.2606	-.016437	-.056933	.432

$p < .05$

It can be seen from Table 12 that R was significantly different from zero at the end of each step. Addition of each variable to the equation resulted in a significant increment in R square. After step 65 with all IVs in the equation, $R = .541$, $F(65,75) = .48$, $p < .05$.

Only two of a total of 64 independent variables (IV) contributed significantly to students' achievement on IAD. The two variables were MARSTAT7 and RSNDIF23, (see Tables 12 and 13). These variables were positively related to students' achievement on IAD ($R = .541$). The additive combination of the eight variables accounted for 29.3% (R square = .293) of the variance of students' achievement on IAD.

The variable "to ask about some difficulty in the tutorial" (RSNDIF23) made the highest contribution to predicting the variability in students' achievement on IAD, accounting for 26.1% (R square = .261). Marital status (MARSTAT7) accounted for 3% (see the results in Table 13). These findings indicate that "to ask about difficulty in the tutorial" was the best predictor among the other significant predictors.

5.3.2.2. Regression analysis on MATH.

The results of stepwise regression analysis for each step of the independent variables entered the equation

with ESSENTT as a dependent variable are reported in Table 14. The table includes information about multiple regression R , R square, adjusted R square, and F test which shows that the multiple regression is significantly not equal to zero.

Table 14

Summary of stepwise regression analysis of tutorial essence for the students and student background; motivation for entering UT; ease of access to tutorial; motivation to attend tutorial; tutoring behavior; student preparation for tutorial, and student difficulties analysis on the MATH achievement of 43 students.

Variable entered....	R	R square	Adj R square	F
1 RSNCOM23	.9750	.9507	.9495	799.683
2 HISPRT24	.9872	.9746	.9734	777.124
3 DFFAM32	.9897	.9796	.9780	631.187
4 DFWORK32	.9911	.9824	.9805	535.713
5 DSCEXA24	.9921	.9842	.9821	466.220
42 RSNFIL23	.9941	.9883	-.0376	.963

$p < .01$

RSNCOM23 to communicate with Tutor
 HISPRT24 Encourage the high spirit to study
 DFFAM32 Family problem
 DFWORK32 Work problem
 DSCEXA24 Discuss the last exam test
 RSNFIL23 To fill out an empty time

The summary of the variables in the equation at the end of the stepwise procedure analysis is presented in Table 15. It displays the multiple regression R , R square, change in R , the semi partial correlation (square sr) the unstandardized regression coefficient (B) and intercept, the standardized regression coefficient (beta),

and F test.

Table 15.

Summary of variables in the equation from the stepwise regression analysis on MATH achievement.

Variable entered no.	<u>R</u>	<u>R</u> square	Change in <u>R</u>	sr sq (unique)	<u>B</u>	Beta	<u>F</u>
1 RSNCOM23	.9750	.9507	.9495	.9507	.669579	.262898	799.683
2 HISPRT24	.9872	.9746	.9734	.0239	.841773	.328276	38.160
3 DFFAM32	.9897	.9796	.9780	.0050	1.073171	.198001	9.588
4 DFWORK32	.9911	.9824	.9805	.0028	.514394	.085164	6.071
5 DSCEXA24	.9921	.9842	.9821	.0018	.243794	.091612	4.303
42 RSNFIL23	.9941	.9883	-.03766	.0041	.075131	.024654	.005

$p < .01$

It can be seen from Table 14 that R was significantly different from zero at the end of each step. Addition of each variable to the equation resulted in a significant increment in R square. After step 42 with all IVs in the equation, $\underline{R} = .994$, $\underline{F} (42,0) = .963$, $p < .01$.

Only six of a total of 64 independent variables (IV) contributed significantly "to grasp the essence of tutorial" on the MATH achievement. The six variables were RSNCOM23, HISPRT24, DFFAM32, DFWORK32, DSCEXA24, RSNFIL23, (see Tables 14 and 15). These variables were positively related to "grasp the essence of tutorial" ($R = .994$). The additive combination of the six variables accounted for 0.4% (R square = .004) of the variance of students grasping the essence of tutorial on MATH.

The variable "to communicate with tutor" (RSNCOM23) made the highest contribution to predicting the

variability in frequencies of attending the tutorial, accounting for 72.7% (sr square = .727). To know better about independent learning (RSNIND23) accounted for 10.11%, whereas the other variables accounted for less than 5% of the explained variables on students' frequency of attending the tutorial (see the results in Table 19). These findings indicate that the problem "hesitate to study" was the best predictor among the other significant predictors.

The results of stepwise regression analysis for each step of the independent variables entered in the equation with FREQ as a dependent variable are in Table 16. The table includes information about multiple regression R, R square, adjusted R square, and F test which shows that the multiple regression is significantly not equal to zero.

Table 16.

Summary of stepwise regression analysis of frequencies of tutorial and student background; motivation for entering UT ease of access to tutorial; motivation to attend tutorial; tutoring behavior; student preparation for tutorial, and student difficulties analysis on the IAD achievement of 43 students.

Variable entered	<u>R</u>	<u>R</u> square	Adj <u>R</u> square	<u>F</u>
1 DFHEST32	.8526	.7269	.7203	110.416
table continous...				

2	REGCENT3	.8768	.7687	.7573	67.284
3	TOOLD34	.8914	.7945	.7789	50.887
42	RSNIND23	.9464	.8957	.2341	.098

p < .05

Variables:

DFHEST32 The problem hesitate to study
 REGCENT3 Regional Centre
 TOOLD34 Feel to old
 RSNIND23 To know better about independent learning

The summary of the variables in the equation at the end of the stepwise procedure analysis is presented in Table 17. It displays the multiple regression R , R square, change in R , the semi partial correlation (square sr) the unstandardized regression coefficient (B) and intercept, the standardized regression coefficient (beta), and F test.

Table 17.

Summary of variable in the equation from the stepwise regression analysis on MATH achievement.

Variable entered no.	R	R square	Change in R	sr sq (unique)	B	Beta	F
1 DFHEST32	.8526	.7269	.7203	.7269	.964515	.445287	110.416
2 REGCENT3	.8768	.7687	.7573	.0418	.716217	.153461	7.322
3 TOOLD34	.8914	.7945	.7789	.0258	.688056	.129895	4.953
42 RSNIND23	.9464	.8957	-8.2341	.1011	.232004	.219782	.012

p < .05

It can be seen from Table 16 that R was significantly different from zero at the end of each step. Addition of each variable to the equation results in a significant increment in R square. After step 42 with all IVs in the

equation, $R = .946$, $F(42,0) = .098$, $p < .05$.

Only four of a total of 64 independent variables (IV) contributed significantly to frequencies of attending the tutorial on the MATH achievement. The four variables were DFHEST32, REGCENT3, TOOLD34, RSNIND23 (see Tables 16 and 17). These variables were positively related to "grasp the essence of tutorial" ($R = .896$). The additive combination of the eight variables accounted for 10.1% (R square = .101) of the variance of students' frequencies of attending the tutorial on MATH achievement.

The variable "hesitate to study" (DFHEST32), made the highest contribution to predicting the variability in student achievement on MATH, accounting for 72.69 % (R square = .7269). To know better about independent learning (RSNIND23) accounted for 10.11%, whereas the other variables accounted for less than 5% of the explained variables on students' frequency of attending the tutorial (see the results on Table 17). These findings indicate that the problem hesitate to study was the best predictor among the other significant predictors.

The results of stepwise regression analysis for each step of the independent variables entered the equation with MATH as a dependent variable are shown in Table 18. The table includes information about multiple regression R , R square, adjusted R square, and F test which shows

that the multiple regression is significantly not equal to zero.

Table 18.

Summary of stepwise regression analysis of students MATH achievement and student background; motivation for entering UT; ease access to tutorial; motivation to attend tutorial;tutoring behavior; student preparation to tutorial, and student difficulties analysis on the MATH achievement of 43 students.

Variable entered....	<u>R</u>	<u>R</u> square	Adj <u>R</u> square	<u>F</u>
1 OTHUNI12	.4516	.2040	.1848	10.629
42 DFMDL32	.8435	.7114	-24.538	.028

p < .05

OTHUNI12 Study in other University before UT
DFMDL32 The module are too difficult

The summary of the variables in the equation at the end of the stepwise procedure analysis is presented in Table 19. It displays the multiple regression R, R square, change in R, the semi partial correlation (square sr) the unstandardized regression coefficient (B) and intercept, the standardized regression coefficient (beta), and F test.

Table 19.

Summary of variable in the equation from the stepwise regression analysis on MATH achievement.

Variable entered no.	<u>R</u>	<u>R</u> square	Change in <u>R</u>	sr sq (unique)	<u>B</u>	Beta	<u>F</u>
1 OTHUNI12	.4516	.2040	.1848	.2040	.138726	.211205	10.629
42 DFMDL32	.8435	.7114	-24.538	.5075	-.099232	-.101170	.021

p < .05

It can be seen from Table 18 that R was significantly different from zero at the end of each step. Addition of each variable to the equation resulted in a significant increment in R square. After step 42 with all IVs in the equation, $R = .844$, $F(42,0) = .028$, $p < .01$.

Only two of a total of 64 independent variables (IV) contributed significantly to students' MATH achievement. The two variables were OTHUNI12 and DFMDL32 (see Tables 18 and 19). These variables were positively related to students' MATH achievement ($R = .844$). The additive combination of the two variables accounted for 71.1 % (R square = .711) of the variance of students' achievement on MATH.

The variable "the modules are too difficult" (DMFMDL32) made the highest contribution to predicting the variability in students' achievement on MATH, accounting for 50.75% (R square = .5075). Study in other university before UT (OTHUNI12) accounted for 20.4%, (see the results in Table 19). These findings indicate that "the modules are too difficult" was the best predictor among the other significant predictors.

5.4. Anova analysis.

Research question #3a:

Are the students better able to achieve in Mathematics if they participate in learning with intensive face-to-face tutorial on campus then if they only study by themselves and attend the tutorial

only once, or twice a semester?

There are three categories of frequencies of attending tutorial in this study; there are "one time attending tutorial"; "two or three times attending tutorial" and "an intensive tutorial". Table 20 shows the number of students, the means, and the standard deviations of Mathematics scores as dependent variable by frequencies of attending the tutorial:

Table 20.

Number, means, and standard deviations of Mathematics score as dependent variable by frequencies of attending tutorial.

Frequencies of attending tutorial	n	Mathematics score	
		<u>M</u>	<u>SD</u>
One time	3	1.24	.68
Two-three times	3	1.51	1.22
an intensive	9	.94	.54
Total	15	1.12	.72

note : n = number
M = Mean
SD = Standard deviation

Using One way ANOVA, the means of Mathematics scores were analyzed as presented in the following:

Table 21

One way ANOVA of Mathematics score as dependent variable by frequencies of attending tutorial

Source	DF	SS	MS	<u>F</u>	<u>p</u>
Between groups	2	.8404	.4202	.7792	.4791
Within groups	13	7.0104	.5393		

Total 15 7.8507

There were no differences found among students' mathematics scores from different times of attending tutorials. Therefore, different frequencies of attending the tutorial did not affect the students' Mathematics scores.

Research question #3b:

Are the students better able to achieve in IAD if they participate in learning with intensive face-to-face tutorial on campus than if they only study by themselves and attend the tutorial only once, or twice a semester?

Table 22 shows the number of students, the means, and the standard deviations of IAD scores as dependent variable by frequencies of attending the tutorial:

Table 22

Number, means, and standard deviations of IAD score as dependent variable by frequencies of attending tutorial.

Frequencies of attending tutorial	n	<u>IAD score</u> <u>M</u>	<u>SD</u>
One time	5	1.27	.68
Twice-three times an intensive	13	1.32	.57
	52	1.44	.61
Total	71	1.40	.60

Using One way ANOVA, the means of IAD scores were

analyzed as presented in the following:

Table 23

One way ANOVA of IAD score as dependent variable by frequencies of attending tutorial.

Source	DF	SS	MS	F	p
Between groups	2	.2427	.1214	.3302	.7199
Within groups	68	24.9915	.3675		
Total	70	25.2342			

There were no differences found among students' IAD scores from different times of attending tutorials. Therefore, different frequencies of attending tutorial did not affect the students' IAD scores.

In addition, this study found that there were differences between gender on Mathematics and IAD scores.

Table 24 shows the number of students, the means, and the standard deviations of Mathematics scores as dependent variable by gender:

Table 24

Number, means, and standard deviations of Mathematics score as dependent variable by gender.

Gender	Mathematics score		
	n	M	SD
Female	13	.8949	.3189
Male	29	1.1968	.8481
Total	42	1.1037	.7361

Using One way ANOVA, the means of Mathematics scores were analyzed as presented in the following:

Table 25

One way ANOVA of Mathematics score as dependent variable by gender.

Source	DF	SS	MS	<u>F</u>	<u>p</u>
Between groups	1	.8457	.8457	1.5635	.2182
Within groups	41	22.1766	.5409		
Total	42	23.0223			

Significant differences were found between students' mathematics scores and gender, $F(1,42) = 1.563$, $p < .21$. The results showed that the Mathematics scores of males (mean= 1.20) were significantly different from the Mathematics scores of females (mean= 0.90) at $p < 0.5$. Therefore, gender affects the students' Mathematics scores.

Table 26 shows the number of students, the means, and the standard deviations of IAD scores as dependent variable by gender:

Table 26

Number, means, and standard deviations of IAD score as dependent variable by gender.

G e n d e r	n	<u>M</u>	<u>SD</u>
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table continuous...

<u>G e n d e r</u>	<u>n</u>	<u>M</u>	<u>SD</u>
Female	42	1.3015	.6113
Male	100	1.4426	.6989
Total	142	1.4006	.6750

Using One way ANOVA, the means of IAD scores were analyzed as presented in the following:

Table 27

One way ANOVA of IAD score as dependent variable by gender.

<u>Source</u>	<u>DF</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Between groups	1	.5914	.5914	1.3000	.2562
Within groups	140	63.6854	.4549		
Total	141	64.2767			

There was a significance difference found between students' IAD scores and gender; $F(1,141)=1.300$, $p=.256$. The results showed that the IAD scores of males (mean=1.44) were significantly different from the IAD scores of females (mean=1.30) at $p < 0.5$. Therefore, gender affects the students' IAD scores.

5.6 Students' Comments

Research question # 4:

What are students' perceptions of the quality and the quantity of UT tutorials?

The respondents were glad to be involved in this study. The students gave both positive and negative opinions. In addition to being proud to be UT students, they gave some suggestions on several aspects such as Tutorial, Examination, Module, UT's service, and students' problems. The students hope that UT would help the students cope with their problems.

In Tutorial, 30 students commented that the tutorial should be provided more often by UT and 20 students suggested intensive tutorials. Students complained about the quality of tutorial, they want the tutor to be knowledgeable about the course. Twelve students suggested tutorial via television/video or radio. They also want the schedule of the tutorial to be sent to the student, because, for those students who are working, it is difficult for them to go to a Regional Center just to pick up the schedule.

On the examination aspects, the highest number of complaints (32 students) concerned the fact that the examination results were almost always received too late, after more than 8 weeks. This is a problem because students need to register and study for the next set of courses, but they need the results of their exams to know

whether they should continue with the next courses or take the courses again if they have failed. Because the results were always late, they only have one month to study for the course before the next exam period. In addition, some of the students ask to have only 2 course exams per day. On the Module, the greatest number of complaints concerned the module production. Twenty nine students complained that there were no modules available when they enrolled in a course. Eighteen students questioned the quality of modules including printing errors, excessive module length, and a number of respondents complained that the exams were not connected with the modules.

On UT's staff services, 12 students complained that there was not enough service from UT staff, and 15 students questioned the lack of communication with students. A number of respondents suggested a move to a more decentralized regional center system. Seven students wondered about library resources for UT students.

Several students also asked about how to be a successful and independent student of distance learning. Several students commented that, even though they studied hard and attended the tutorial, their scores were still low. Some students suggested study groups.

Chapter VI

DISCUSSION

There were two major findings concerning the objective of this investigation. The first finding revealed the major factor that influences student attendance at tutorials. The second finding concerns the major factors of tutorials that contribute to student learning outcomes. Six of the seven hypotheses of the present study were supported by the data. The correlations between independent variables and two dependent variables, *FREQ* and *ESSENTT*, were high. Although for the dependent variable *SCORE*, the correlations were relatively small, the highest correlation with *SCORE* and each of the three independent variables was .11, which means that only 3 percent of variance in student achievement was accounted for by variables: 'student marital status'; 'despite tutorial UT has enough support for students study'; and 'using telephone reduces isolation feeling'.

The regression analyses on *IAD* and *MATH* were treated separately. The results indicated that different learning outcomes of different subject matters were accounted for by different sets of predictors.

Moreover, subsidiary findings show that, first, there was no significant difference on frequencies of attending tutorial among students' Mathematics scores. However,

there were significant differences between gender on students' Mathematics scores. Male students showed higher scores on Mathematics than did female students. Second, there were no significant differences in frequencies of attending tutorial among students' IAD scores. There were significant differences between gender on students' IAD scores. Male students showed higher scores on IAD scores than did female students.

Student background and learning outcomes.

The students' backgrounds seemed to make important contributions to student learning outcomes. Student achievement showed small correlations with older students, male students and married students, who appeared to have slightly higher examination scores. In contrast, Djalil (1987) found that student backgrounds were less important in explaining student learning outcomes.

Rekkedal (1985), on the other hand, found that the one single characteristic which contributed most significantly to the prediction of academic success was whether the student was a veteran or a novice at OUI. The findings of this present study indicate that UT students' backgrounds are important factors in students' learning outcomes, which might contribute to better understanding of the question of whether or not the heterogeneity of UT students' backgrounds hinder those students from attaining

higher achievement.

Attending tutorial more often tended to be more important for female students, single students and full-time working students. The findings suggest that providing good quality tutorials may attract more young students to attend since UT statistics (1991) indicate that 21% of UT students are under 24 years of age. Although the Indonesian government has urged UT to accommodate a higher percentage of younger students in its system, more than 84% of new Senior High School (SHS) graduates did not enter UT because UT did not offer frequent and intensive face to face tutorials (Mahfud, 1987). UT policy must, therefore, include efforts to attract younger students, and it would appear that provision of better tutorials is one way to accomplish this goal.

Student Academic background and learning outcomes.

The examination of students' academic backgrounds indicated that students who study in other universities seem both to have slightly higher examination scores and to attend the tutorial more often. It is reasonable to assume that the students are accustomed to the teaching learning interaction in the classroom. This finding suggests that face to face tutorials for students could contribute to improvement of the students' examination scores.

Reasons to attend the tutorial and learning outcomes.

The students who have the following reasons for attending tutorial, "in order to make acquaintance with other students" and "to fill empty time", seemed to have lower examination scores. Since these reasons for attending tutorials were not closely related to academic motivation, reasons to attend the tutorials seemed to affect student achievement. These findings could be used to support UT's image as an institution for academically minded students.

The following reasons for attending tutorials, "to know better about UT and the Regional Center", "to get acquaintance with other students", "to ask about some difficulty in the course", "to improve the learning spirit", "to know better about independent learning", "to fill empty time", "tutorial as an obligation", "to add knowledge", "to communicate with tutor", "to solve the problem in modules" and "to know better about tutorial" influenced students to attend tutorials more often. These findings suggest that it is important that variability in tutorial programmes and approaches be available to students.

The following reasons for attending the tutorial, "to know better about UT and the Regional Center"; "to make acquaintance with other students"; "to ask about some

difficulty in the course"; "to improve the learning spirit"; "to know better about independent learning"; "to fill empty time"; "tutorial as an obligation"; "to add knowledge"; "to communicate with tutor"; "to solve a problem in the module" and "to know better about tutorial" influenced the students' grasping the essence of tutorial. These findings suggest both that it is important for the tutorial program to be made available to the students, and that the tutorial should be designed to be effective in terms of student learning outcomes.

The following reasons "distance to the tutorial"; "the length of time to the tutorial"; and "more fees for tutorial" were not seen as problems for the students in attending more tutorials since they perceived that tutorials were important. However, those students whose purposes in attending the tutorial included, "to identify the points that might be in the exam"; "to discuss academic, administration and student facilities" and "to discuss the last exam test" seemed to have lower examination scores. It is possible, then, that the following purposes for attending tutorials, "discuss the main feature of module"; "identify the points which might be in the exam"; "make resume from materials in module"; "show how to do independent learning"; "encourage an intensive discussion"; "discuss academic, administration

and student facilities"; "discuss module mistakes"; "discuss the module page by page"; "encourage the high spirit to study"; and "discuss the last exam" could be used as the basic purposes of the tutorial program to be developed by UT. Even though a further finding indicated that those students who faced a longer travel distance to the tutorial location were better able to grasp the essence of the tutorial, the majority of the findings of the present study about the impact of tutorials indicate that UT must address the problem of distance from tutorial location.

The present study revealed that students who stated that they read a module/book connected to their studies seemed to have lower examination scores. This finding was in contrast with the findings in Djalil's (1987) study, which found that students who learned the module before it was discussed in the tutorial session experienced positive effects on learning outcomes. The more time the students spent in studying relevant materials, the more likely they would succeed in mastering those materials. The findings of the present study indicate that, although the students read the materials, they could not master them. It is, thus, advisable that UT revise and improve the modules, and also that students be encouraged to spend more time reading the modules.

Tutorial behaviour and learning outcomes.

One of the basic research questions of this study was: what are the major factors of tutorials that contribute to students' learning outcomes?

There were nine tutoring behaviour variables included in the analysis. The patterns of interrelations among the variables were examined. The results indicated that the interrelationships among the variables were relatively high and positive. Their correlations with student learning outcomes, especially with frequency to attend the tutorial and to grasp the essence of the tutorial, were positively significant. Tutoring behaviours were negatively and significantly related to the examination scores. The findings may be interpreted in this way: if a tutor demonstrated tutoring behaviours that were not directly related to academic matters less often and, at the same time, improved the quality of tutoring behaviours that were not directly related to academic matters, the greater the chance the tutor would facilitate students' achieving higher examination scores.

The elements which constitute effective tutoring behaviours have to some extent been identified by the present study. However, it should not be concluded that the present study has definitively identified those elements which make a tutor effective. Moreover, as it is

generally understood that correlation does not infer causation, further research is necessary in order to generate a clearer picture of those tutoring behaviours which are responsible for improved student achievements.

Student problems and learning outcomes.

Various problems encountered by students which may deter them from achieving maximum learning have been identified in the literature. It would be useful to know to what extent each of the problems is related to student achievement. From the 13 problems listed on the questionnaire of the present study, nine were significantly correlated with the criterion variables. This could be interpreted to mean that, if students were assisted to cope with those nine difficulties, they might become successful learners at UT. Several of the problems could be related to lack of confidence, feelings of isolation, lack of confidence in learning ability, or different educational background. Others might be related to study environment : too busy, family problems, health problems, difficult to join the study group and communicate with Regional Center, or distance to tutorial place. Several other problems might be related to "module too difficult", "module not yet received", or "absence of academic feedback". The findings seemed to suggest that UT should include in their planning systematic methods and

efforts to assist students in coping with their problems.

Having discussed briefly the findings of the correlational study, some elements for improvement of tutorial programmes and approaches may be recognized. Two elements for improvement which have been identified by the present study are the following:

1. Tutoring behaviours that indicate a general picture of what constitutes effective tutoring; and
2. Student difficulties related to motivational, environmental, or personal factors that need to be eliminated or minimized in order to facilitate students participating and learning in UT.

If we want to discuss what should be the effective tutorial model system, the two elements discussed above should be taken into consideration.

Different courses and learning outcomes.

The results indicated that different learning outcomes of different subject matters were accounted for by different sets of predictors. These findings are consonant with the findings of the studies by Dunkin and Biddle(1974), Rosenhire (1971) and Djalil (1988).

In IAD, eight variables contributed significantly to "grasp the essence of tutorial" and the variable "encourage an intensive decision", $R=.979$, $F(64,76)= 26,86$ made the highest contribution to predicting the

variability in grasping the essence of tutorial. Eleven variables contributed significantly to frequency to attend the tutorial on IAD achievement. The variable "discuss the last exam", $R=.928$, $F(64,76)=7.34$, $p<.01$, made the highest contribution to predicting the variability in frequency of attending the tutorial. Two variables contributed significantly to students' achievement on IAD tutorial. The variable "to ask about some difficulty in the tutorial", $R= .541$, $F(65,75)= .48$, $p< .05$, made the highest contribution to predicting the variability in the students' achievement on IAD.

In Mathematics, only six of a total of sixty-four independent variables contributed significantly to "grasp the essence of tutorial". The variable "to communicate with tutor", $R=.994$, $F(42,0)=.963$, $p<.01$, made the highest contribution to predicting the variability in frequency of attending the tutorial. Four variables contributed significantly to frequency of attending the tutorial on the Mathematics achievement. The variable "hesitate to study", $R= .964$, $F(42,0)=.098$, $p<.01$, made the highest contribution to predicting the variability in students' achievement on Mathematics. Only two variables contributed significantly to students' Mathematics achievement. The variable "the modules are too difficult", $R=.844$, $F(42,0)=.028$, $p<.01$, made the highest contribution to

predicting the variability in students' achievement on Mathematics.

Regular tutorial, intensive tutorial and students' achievement.

The present study found that there were no significant differences of frequencies of attending the tutorial among student achievement levels. These findings support a study conducted by Holmberg and Schuemer (1988). Their study results provide no basis for confidence in statements about the impact of various frequencies of tutor-students contacts. No statistically significant differences between the groups were found with regard to achievement in the study by Holmberg and Schuemer (1988).

These findings, however, are contrary to the findings of the studies by Enoch (1987) and Guri-Rozenblit (1990). Enoch, in his study, found that intensive tutoring, whether in an organizational framework or for individual students, is beneficial. Individual students in intensively tutored groups do better than regular students. Enoch found that intensive tutoring contributes to academic success. More tutoring makes better results. Guri-Rozenblit, in her study of OUI's experiences, shows quite clearly that intensive tutoring within face-to-face study groups provides efficient support to many students, especially to those who are "educationally disadvantaged".

Many students who would not be able to cope with distance learning material as completely independent learners seem to be able to complete even quite difficult courses when given extra tutoring and group support.

Furthermore, the findings of this present study showed that there were significant differences in students' achievement by gender. This is in contrast to a study by Ganor (1990) which showed that there were no significant differences between the regular and organized groups with regards to gender.

CHAPTER VII

SUMMARY, CONCLUSIONS, RECOMMENDATIONS, & LIMITATIONS

Summary & Conclusions

The face-to-face tutorial at Universitas Terbuka in Indonesia was examined in this study. The data obtained in this study were gathered from questionnaires administered to 588 students from 2 Regional Centers, Jakarta and Pontianak. Two major questions and two subsidiary questions were investigated. First, what are the major factors that influence the students to attend the tutorial? Second, what are the major factors of tutorials that contribute to students' learning outcomes? Third, are the students better able to achieve in Mathematics or IAD if they participate in learning with intensive face-to-face tutorial on campus than if they only study by themselves and attend face-to-face tutorials only once/twice a semester? Fourth, what are the students' perceptions of the quality and the quantity of UT's tutorials? These questions were also examined according to the students' frequencies of attending tutorial and their achievement on Mathematics and IAD.

In brief, the following conclusions of the study were drawn:

1. The results indicated that there were four factors that influence students to attend the tutorial which

significantly correlated with the students' background, students' academic backgrounds, reasons to attend the tutorial, and tutorial behavior. In contrast, Djalil (1987) found that UT students' backgrounds were not important in explaining students' learning outcomes. On the other hand, Rekkedal (1985) found that the one single characteristic which contributed most significantly to the prediction of academic success was whether the student was a veteran or a novice at OUI.

2. The results indicated that different learning outcomes of different subject matters were accounted for by different sets of predictors. These findings were consonant with the studies by Dunkin and Biddle(1974), Rosenhire (1971) and Djalil (1988).

On IAD, eight variables contributed significantly to 'grasp the essence of tutorial' ($R=.979$); and the variable, 'encourage an intensive discussion', made the highest contribution to predicting the variability in grasping the essence of tutorial. Eleven variables contributed significantly to frequency to attend the tutorial on IAD achievement ($R= .928$). The variable, 'discuss the last exam', made the highest contribution to predicting the variability in frequency of attending the tutorial. Two variables contributed significantly to students' achievement on IAD tutorial ($R= .541$). The

variable 'to ask about some difficulty in the tutorial' made the highest contribution to predicting the variability in the students' achievement on IAD.

On Mathematics, only six of a total 64 independent variables contributed significantly to 'grasp the essence of tutorial' ($R=.994$). The variable, 'to communicate with tutor' made the highest contribution to predicting the variability in frequency of attending the tutorial. Four variables contributed significantly to frequency of attending the tutorial on the Mathematics achievement ($R=.896$). The variable, 'hesitate to study' made the highest contribution to predicting the variability in students' achievement on Mathematics. Only two variables contributed significantly to students' Mathematics achievement ($R= .844$). The variable, 'the modules are too difficult' made the highest contribution to predicting the variability in students' achievement on Mathematics.

3. There were nine tutoring behaviour variables included in the analysis. The results indicated that the interrelationships among the variables were relatively high and positive. The correlations with student learning outcomes, especially with 'frequency to attend the tutorial' and 'to grasp the essence of the tutorial', were positively significant.

4. There were no significant differences in frequencies of

attending tutorial among students' achievement levels on IAD nor on Mathematics ($p < 0.5$). These findings support a study by Holmberg and Schuemer (1980). Their study results provide no basis for confidence in statements about the impact of variation in frequencies of tutor-student contacts. These findings, however, are contrary to the findings of studies by Enoch (1987) and Guri-Rozenblit (1990). Enoch found that intensive tutoring contributes to academic success, and more tutoring makes better results. Guri-Rozenblit found that with the intensive tutoring with face-to-face, many students who would not be able to cope with distance learning material as a completely independent learner seem to be able to complete even difficult courses when given extra tutoring and group support.

5. The results indicated that male students achieved better results than female students both on IAD and Mathematics. These findings are in contrast to a study by Ganor (1990), which showed that there were no significant differences between the regular and organized group with regards to gender.

Recommendations

As previously stated, the purpose of this study was to determine whether or not the intensive tutorial results in higher achievement than does one or two times per

semester tutorial in the distance learning system at Universitas Terbuka.

The results of the study showed that there were no significant differences in students' achievement on Mathematics or Introduction to Basic Science (IAD) depending on whether or not they took intensive or regular tutorials.

The findings of this study provide information about factors that influence students to attend the tutorial. This information could be used by UT as a basis for their tutorial program. Accordingly, the findings imply that, if UT provides students with effective tutorials, this might help students to attain a high achievement. Universitas Terbuka could offer a tutorial system which could help students improve their study by using the following suggestions:

1. UT should provide skillful tutors;
2. Student services at Regional Centres should be improved;
3. Counselors should be provided for students at Regional Centers;
4. The modules should be revised periodically;
5. The modules should be produced as needed. If enough modules are not available for the students, this could create problems for students in studying for the exam;

6. The processing of examination results should be improved to ensure that students are able to continue their study without undue interruption;
7. The Regional Centers system should be decentralized to facilitate problem-solving between students and UT.

It is also recommended that, in a distance institution, students could be trained as "peer counselors", which is relatively low cost to the institution. Since the sample of this study was drawn from two Regional Centers, Jakarta and Pontianak, further studies which would enlarge the sample population (from the 32 UT Regional Centers) is suggested. The results of the present study will be used for further research on the UT program. A study which is suggested for further research is an experimental study where the student sample is divided into two groups: an experiment group and a control group, and given a pre test and a post test (Rekkedal,1986).

Limitations

This present study has several limitations which should be noted. Generalization to a larger population should be made with caution, since the sample of the study was limited to only two regional centers at Universitas Terbuka in Indonesia. In fact, there are 32 Regional Centers throughout the country.

Two considerations which also limited the sample of the present study were the limitations of budget and time. This may limit the utility of the final report. This study was exploratory in that it was designed to raise several questions which might lead to further investigation. Any conclusions are restricted to UT at this present time and any recommendations will be used only in this context.

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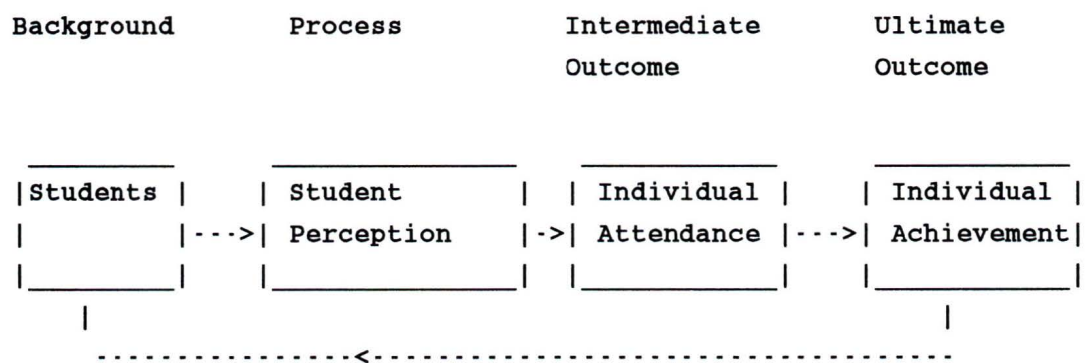
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A P P E N D I C E S

APPENDIX A

MODEL OF THE STUDY**Variables**

- achievement
- Student background
- Student perception

Sources

- Sampled Student questionnaires
- Student achievement end of semester

APPENDIX B

Research letter to the students
(English version)

No : 4001/PT45/N/1992

June 29, 1992

Dear : Student of Universitas Terbuka.

In connection with improving the quality of services of Universitas Terbuka (UT) and evaluating administrative conditions regarding teaching, advising and follow up at the UT, the following research is required, especially as far as student experiences in face-to-face tutorials.

This research will be conducted by Lisdiana Sari, Universitas Terbuka staff, who is completing her Masters program at the University of Victoria, Canada.

As a UT student, you are the resource for information for this research, that is why you are being asked to fill out this questionnaire according to the instructions. Your answers will be held in strictest confidence, so you do not have to hesitate to fill out the questionnaire, according to your experience.

After you finished filling out the questionnaire, please fold the questionnaire, put it in the enclosed stamped and addressed envelope, and return it as soon as possible, not more than one week after you received the questionnaire.

Your participation would be gratefully appreciated. I am sure that you will send back the questionnaire on time. Thank you very much for your attention.

Rector,

Setijadi.

Surat kepada Mahasiswa
(Indonesian version)

Nomor : 4001/PT45/N/1992

29 Juni 1992

Kepada

Yth : Sdr. Mahasiswa Universitas Terbuka

Dalam rangka untuk meningkatkan mutu pelayanan Universitas Terbuka serta untuk mengevaluasi kondisi administrasi pengajaran dan bimbingan, maka perlu diadakan penelitian yang berkesinambungan, khususnya pengalaman mahasiswa tentang tutorial tatap muka. Penelitian ini dilakukan oleh sdr. Lisdiana Sari, staf Universitas Terbuka yang sedang mengikuti program S2 di University of Victoria, Kanada.

Sebagai mahasiswa Universitas Terbuka, Anda merupakan sumber informasi dalam penelitian ini, untuk ini anda dimohon mengisi kuesioner terlampir sesuai dengan petunjuk yang diberikan. Jawaban yang Anda berikan akan dijamin kerahasiannya sehingga Anda tidak perlu ragu-ragu mengisinya, dan isilah sesuai dengan pengalaman Anda.

Setelah Anda selesai mengisinya, mohon kuesionernya dilipat dan dimasukkan kedalam amplop kecil terlampir yang telah beralamat dan berperangko, kemudian kirim secepatnya kepada kami, paling lambat satu minggu setelah kuesioner Anda terima.

Kerjasama dan partisipasi Anda sangat kami harapkan. Kami percaya Anda akan mengembalikan kuesioner ini tepat pada waktunya. Atas perhatian dan kerjasama Anda, kami mengucapkan terima kasih.

Rektor,

Prof. Dr. Setijadi

APPENDIX C

The Questionnaire
(English version)

THE INSTRUCTIONS TO FILL OUT.

1. To fill out each question, just fill in the blank (.....) or give the mark V in each box.
2. If you find an option in your answer ----> question n. It means you are asked to answer through question n, and you do not have to answer the question between that question and n question.
3. In some questions you will ask to answer more than once; for that reason, please read each question carefully before you answer it.

SECTION A : PERSONAL DATA.

1. Name :
2. Student Number :
3. Regional Centre :
4. Study Program :
5. Age : ... years.
6. Sex : 1. (...) Female 2. (...) Male
7. Marital status : 1. (...) Single. 2. (...) Married.
8. Do you work : 1. (...) Yes. 2. (...) No.----> 11.
9. Your main job : 1. (...) Government employee.
2. (...) Private employee.
3. (...) Self-employed.
4. (...) Other :
10. Status of your job : 1. (...) Full time.
2. (...) Part time.
11. When did you complete high school :
12. Did you attend a university before you entered Universitas Terbuka? 1. (...) Yes. 2. (...) No.

13. What is of the highest certificate you have :

1. (...) Senior High School.
2. (...) Economic High School.
3. (...) Technology High Schhol.
4. (...) Diploma.
5. (...) BA.
6. (...) B1.
7. (...) Undergraduate.

B. TUTORIALS.

14. Do you read articles/magazines/books which are connected with your study program in UT?

- | | |
|-------------------------|------------------|
| 1. (...) Never. | 2. (...) Rarely. |
| 3. (...) Seldom. | 4. (...) Often. |
| 5. (...) Almost always. | |

15. Did you take IAD course tutorials?

- | | |
|---------------|-----------------------|
| 1. (...) Yes. | 2. (...) No. ---> 18. |
|---------------|-----------------------|

16. If your answer to no.15 is yes;

How many times persemester did you take the tutorials?

- | | |
|--|------------------------|
| 1. (...) One time. | 2. (...) 2 or 3 times. |
| 3. (...) An intensive tutorial
(more than 4 times). | |

17. If your answer to no.15 is yes;

Where did you take the tutorials?

- | | |
|---------------------|----------------------|
| 1. (...) Campus UT. | 2. (...) PSM UT. |
| 3. (...) KBM UT. | 4. (...) Others: ... |

18. Did you take tutorials for :

1. Economical Statistics (EKON 4216) (...) Yes.(...) No.
2. Management Mathemetics (MANA 4110) (...) Yes.(...) No.
3. Statistics I (ADNE 4215) (...) Yes.(...) No.
4. Mathematics (ADNI 4210) (...) Yes.(...) No.

(If you did not take any tutorial for no.18, please
proceed to no 33, on page 5)

19. If the answer to no. 18 is yes; How many times per
semester did you take the tutorial?

1. (...) One time.
2. (...) 2 or 3 times.
3. (...) An intensive tutorials
(more than 4 times).

20. If your answer to no.18 is yes;

Where did you take the tutorials?

1. (...) Campus UT.
2. (...) PSM UT.
3. (...) KBM UT.
4. (...) Others:

21. How far is it from your place to the Tutorial site ?

... km.

22. How long does it take to go to the Tutorial? ... minutes.

23. What reasons did you have for taking the tutorials for
the courses?

a= Fully disagree

b= Disagree

c= have no answer

d= Agree

e= Fully agree

	a	b	c	d	e
1. To know better about UT and Regional Center.	(..)	(..)	(..)	(..)	(..)
2. To get acquaintance with other students.	(..)	(..)	(..)	(..)	(..)
3. To ask about some difficulties in the course.	(..)	(..)	(..)	(..)	(..)
4. To improve the learning spirit.	(..)	(..)	(..)	(..)	(..)
5. To know better about independent learning.	(..)	(..)	(..)	(..)	(..)
6. To fill up empty time.	(..)	(..)	(..)	(..)	(..)
7. Tutorial was an obligation.	(..)	(..)	(..)	(..)	(..)
8. To add knowledge.	(..)	(..)	(..)	(..)	(..)
9. To communicate with tutor.	(..)	(..)	(..)	(..)	(..)
10. To solve the problem of the modules.	(..)	(..)	(..)	(..)	(..)
11. To be knowledgeable about tutorial.	(..)	(..)	(..)	(..)	(..)

24. What kind of activity did tutor do when he gave tutorial?

	a	b	c	d	e
1. Discuss the main features of module.	(..)	(..)	(..)	(..)	(..)
2. Identify the points which would be in the exam.	(..)	(..)	(..)	(..)	(..)
3. Make summary from materials in module.	(..)	(..)	(..)	(..)	(..)
4. Show how to do independent learning.	(..)	(..)	(..)	(..)	(..)
5. Encourage intensive discussion.	(..)	(..)	(..)	(..)	(..)
6. Discuss about academics,					

- administration and students. (...) (...) (...) (...) (...)
7. Discuss module mistakes. (...) (...) (...) (...) (...)
8. Discuss the module page by page. (...) (...) (...) (...) (...)
9. Encourage spirit to study. (...) (...) (...) (...) (...)
10. Discuss the last exam semester
items test. (...) (...) (...) (...) (...)
25. Can you get the essence of the tutorial material
which is explained by the tutor?
1. (...) No, I can not. 2. (...) Yes, a little bit.
3. (...) Yes, half of it. 4. (...) Yes, most of all.
5. (...) Yes, I can.
26. Did the tutor present an interesting tutorial?
1. (...) Not at all. 2. (...) less interesting.
3. (...) average. 4. (...) more interesting.
5. (...) the best.
27. Did the tutorial improve your knowledge?
1. (...) Not at all. 2. (...) less interesting.
3. (...) average. 4. (...) more interesting.
5. (...) the best.
28. Did you study the module before coming to the tutorial?
1. (...) Not at all. 2. (...) less interesting.
3. (...) average. 4. (...) more interesting.
5. (...) the best.
29. What did you think about the tutor's work and comments
on your assignment?
1. (...) Fully satisfied. 2. (...) Satisfied.
3. (...) no comment. 4. (...) Unsatisfied.
5. (...) Fully unsatisfied.
30. How do you feel about the tutor's help and support?

- | | |
|--------------------------|--------------------------|
| 1. (...) Never support. | 2. (...) Rarely support. |
| 2. (...) Sometimes. | 3. (...) support. |
| 5. (...) Always support. | |

31. How much did you pay for the tutorial? Rp.../semester.

32. What problems do you have in studying the module before tutorials? Yes No

- | | |
|--|----------|
| 1. Have no time to study. | (..)(..) |
| 2. I cannot study independently. | (..)(..) |
| 3. Module not yet received. | (..)(..) |
| 4. Hesitate to study because there is too much material. | (..)(..) |
| 5. Family problem. | (..)(..) |
| 6. Health problem. | (..)(..) |
| 7. Work problem. | (..)(..) |
| 8. The modules are too difficult. | (..)(..) |

33. What reasons did you have for not taking tutorial A/B? (Please respond to answer all the items).

- | | <u>Yes</u> <u>No</u> |
|---------------------------------------|----------------------|
| 1. Have no time. | (..)(..) |
| 2. Having no problem in these courses | (..)(..) |
| 3. Tutorial location is too far away. | (..)(..) |
| 4. Did not know the schedule. | (..)(..) |
| 5. Tutorial is not obligation. | (..)(..) |
| 6. Disaster (rain, flood, etc) | (..)(..) |
| 7. Health problem. | (..)(..) |
| 8. Family problem. | (..)(..) |
| 9. Funding problem. | (..)(..) |
| 10.The tutorial is not interesting. | (..)(..) |
| 11.Tutorial schedule is not as stated | .(..)(..) |
| 12.Others :..... | .(..)(..) |

34. As you are an UT student, what problems do you face,

as explained below? (please respond to all items)

	<u>Yes</u>	<u>No</u>
1. Feel isolated.	(..)	(..)
2. Difficult to study independently.	(..)	(..)
3. Far away from tutorial location.	(..)	(..)
4. Do not have enough support from UT.	(..)	(..)
5. Feel too old.	(..)	(..)
6. Difficult to know self ability in study	(..)	(..)
7. Difficult to join study group.	(..)	(..)
8. Funding problem.	(..)	(..)
9. My background not supported by the course	(..)	(..)
10. Difficulty with my job.	(..)	(..)
11. Difficult to communicate with Regional Center.	(..)	(..)
12. Family problem.	(..)	(..)
13. Other :	(..)	(..)

35. If you look at UT tutorials as one of the methods of distance learning ,how would you categorize it?

- | | |
|---------------------------|----------------------|
| 1. (...) It is the worst. | 2. (...) It is bad. |
| 3. (...) It is common. | 4. (...) It is good. |
| 5. (...) It is the best. | |

36. If you look at UT module as one of the methods of distance learning, how would you categorize it?

- | | |
|---------------------------|----------------------|
| 1. (...) It is the worst. | 2. (...) It is bad. |
| 3. (...) It is common. | 4. (...) It is good. |
| 5. (...) It is the best. | |

37. If you look at UT independent assignement as one of the methods of distance learning, how would yuo categorize it ?

- | | |
|---------------------------|----------------------|
| 1. (...) It is the worst. | 2. (...) It is bad. |
| 3. (...) It is common. | 4. (...) It is good. |

5. (...) It is the best.
38. Did you feel that you have had enough support and explanation from UT ?
1. (...) Yes.
 2. (...) No.
39. Aside from the tutorial, do you think that UT has given you attention/support for your study?
1. (...) Not at all.
 2. (...) to a certain point.
 3. (...) No comment.
 4. (...) Not much.
 5. (...) Always.
40. What do you think about the telephone use for the distance learning system?
1. (...) No need for it at all.
 2. (...) little need.
 3. (...) No comment.
 4. (...) There is some need for it.
 5. (...) Yes, it is needed.
41. Do you think that using the telephone as a communication tool in distance learning could help you feel less isolated?
1. (...) No need at all.
 2. (...) No need.
 3. (...) No comment.
 4. (...) It needed in a certain purposed.
 5. (...) Yes, it needed.
42. How do you think the face-to-face tutorial could support your study?
1. (...) No need for tutorial at all.
 2. (...) Not important, but some form of tutorial is needed.

- 3. (...) Important, 1 - 2 times per semester.
- 4. (...) Important, 3 - 4 times per semester.
- 5. (...) Important, intensive tutorials are needed

If you have any comment, positive or negative, about your experience as a UT student using the distance learning system, please use the space below:

Thank you very much for your cooperation.

KUESIONER
(Indonesian version)

1. Cara Anda menjawab setiap butir pertanyaan hanyalah dengan mengisi titik-titik (.....) atau dengan memberi tanda centang (V) pada kotak yang telah disediakan.

2. Apabila pada suatu butir pertanyaan Anda menjumpai option jawaban dengan tanda

---->pertanyaan n

ini berarti bahwa Anda diminta untuk menjawab langsung ke pertanyaan ke n, tidak perlu menjawab pertanyaan-pertanyaan diantara pertanyaan tersebut dengan pertanyaan ke n. Contoh: -----> 33

Ini berarti Anda dipersilakan langsung mengisi ke nomor 33.

3. Pada pertanyaan-pertanyaan tertentu Anda diminta untuk memberikan jawaban lebih dari satu, untuk itu bacalah setiap pertanyaan dengan seksama sebelum anda menjawabnya.

Bagian A : Data Pribadi.

01. Nama :
02. NIM :
03. UPBJJ :
04. Program studi :
05. Umur :Tahun .
06. Jenis kelamin () Perempuan () Laki-laki
07. Status Perkawinan : 1. Belum menikah.
2. Sudah menikah
3. Janda.
4. Duda.
08. Apakah Anda bekerja: () Ya. () Tidak. ---> 11
09. Pekerjaan pokok Anda : 1. Pegawai negeri.
2. Pegawai swasta (NV, PT, CV, dll.)
3. Wira usaha/Usaha sendiri.
4. Lainnya, sebutkan
10. Status pekerjaan : 1. Tetap 2. Honorer.
11. Ijazah SMTA yang Anda miliki. Tahun
1. () SMA. 2. () SMEA.
3. () STM. 4. () SKKA.
4. () SPG. 6. () PGA.
7. () Lainnya, sebutkan
12. Pernahkah Anda kuliah di Negeri/swasta,
sebelum memasuki UT?
1. () Ya. 2. () Tidak.

13. Ijazah tertinggi yang Anda miliki.

- | | |
|----------------------|-----------------|
| 1. () SMTA. | 2. () D1. |
| 3. () D2. | 4. () D3. |
| 5. () Sarjana Muda. | 6. () B1. |
| 7. () S1/Sarjana | 8. () Lainnya, |
- sebutkan.....

14. Apakah Anda membaca artikel/majalah/buku yang berhubungan dengan program studi Anda di UT?

- | | |
|-----------------------|-----------------------|
| 1. () Tidak pernah. | 2. () Jarang sekali. |
| 3. () Jarang. | 4. () Sering . |
| 5. () Sering sekali. | |

Bagian B : Tutorial.

15. Apakah Anda mengikuti tutorial untuk Ilmu Alamiah Dasar (MKDU 4102) ? Ya () Tidak () -----> 18
(selanjutnya kita sebut tutorial **A**)

16. Apabila jawaban no.15 ya, berapa kali anda mengikuti tutorial tsb ?

1. satu kali.	()
2. Dua atau tiga kali.	()
3. intensive tutorial.	()

17. Apabila jawaban no.15 ya, dimanakah Anda mengikuti tutorial?

- | | |
|----------------------------|-----|
| 1. UT Kampus | () |
| 2. KBM UT | () |
| 3. PSM UT | () |
| 4. Lainnya, sebutkan | () |

18. Apakah anda mengikuti tutorial untuk :

- | | | |
|--------------------------------------|--------|-----------|
| 1. Statistika Ekonomi I (EKON4216) ? | Ya () | Tidak () |
| 2. Matematika Manajemen (MANA4110) ? | Ya () | Tidak () |
| 3. Statistika I (ADNE4215) ? | Ya () | Tidak () |
| 4. Matematika (ADNI4210) ? | Ya () | Tidak () |

(selanjutnya kita sebut tutorial **B**)

(Apabila jawaban Anda tidak untuk no. 18 Anda dipersilahkan langsung menjawab no.34)

19. Apabila jawaban no.18 ya, berapa kali anda mengikuti tutorial tsb ?

1. satu kali. ()
 2. Dua atau tiga kali. ()
 3. intensive tutorial. ()

20. Apabila jawaban no.18 ya, dimanakah Anda mengikuti tutorial ?

1. UT Kampus ()
 2. KBM UT ()
 3. PSM UT ()
 4. Lainnya, sebutkan ()

21. Jarak tempat tinggal ke tempat tutorial Km.

22. Waktu tempuh ke tempat tutorial jam.

23. Apakah alasan Anda mengikuti tutorial pada mata kuliah tsb:

	SS	S	TDM	TS	STS
1. Ingin mendapat gambaran langsung Tentang UT dan UPBJJ.	()	()	()	()	()
2. Saling mengenal antara mahasiswa.	()	()	()	()	()
3. Menanyakan kesulitan yang ada hubungannya dengan pelajaran.	()	()	()	()	()
4. Meningkatkan semangat belajar.	()	()	()	()	()
5. Ingin mengetahui tentang cara - cara belajar mandiri.	()	()	()	()	()
6. Mengisi waktu yang kosong.	()	()	()	()	()
7. Merasa tutorial sebagai keharusan.	()	()	()	()	()
8. Memperkaya pengetahuan.	()	()	()	()	()

9. Membina komunikasi dengan tutor. () () () () ()
 10. Membahas kesalahan yang ditemukan dalam modul. () () () () ()
 11. Ingin tahu tentang cara tutorial () () () () ()

Keterangan :

SS = setuju sekali. S = setuju. TS = Tidak setuju.
 TDM = Tidak dapat menjawab. STS = Sangat Tidak Setuju.

24. Kegiatan apa yang dilakukan oleh tutor pada waktu tutorial A/B (mohon diisi semuanya).

Keterangan :

SS = setuju sekali. S = setuju. TS = Tidak setuju.
 TDM = Tidak dapat menjawab. STS = Sangat Tidak Setuju.

Jenis Kegiatan	SS	S	TDM	TS	STS
1. Membahas garis-garis besar modul.	()	()	()	()	()
2. Mengidentifikasi butir-butir penting yang diduga akan keluar dalam ujian.	()	()	()	()	()
3. Menyusun resume dari bahan-bahan yang ada dalam modul.	()	()	()	()	()
4. Menunjukkan cara belajar mandiri yang efektif.	()	()	()	()	()
5. Tanya jawab intensif.	()	()	()	()	()
6. Membahas masalah administrasi akademik dan kemahasiswaan.	()	()	()	()	()
7. Membahas kekeliruan modul.	()	()	()	()	()
8. Membahas materi modul halaman demi halaman.	()	()	()	()	()
9. Memberikan semangat belajar.	()	()	()	()	()
10. Membahas soal-soal test/ujian yang lalu.	()	()	()	()	()

25. Apakah Anda dapat mengambil intisari materi tutorial A/B yang diterangkan tutor?
1. () Tidak dapat
 2. () Sebagian kecil dapat.
 3. () Separuh bagian dapat.
 4. () Sebagian besar dapat.
 5. () Sebagian dapat.
26. Apakah cara tutor menyajikan bahan menarik?
1. () Sangat tidak menarik.
 2. () Kurang menarik.
 3. () Biasa saja.
 4. () Menarik.
 5. () Sangat menarik.
27. Apakah tutorial dirasakan bermanfaat untuk menambah pengetahuan/ketrampilan Anda?
1. () Sama sekali tidak bermanfaat.
 2. () Kurang bermanfaat.
 3. () Bermanfaat.
 4. () Bermanfaat banyak.
 5. () Sangat bermanfaat.
28. Apakah Anda sebelumnya mempelajari modul yang baru saja ditutorialkan?
1. () Tidak sama sekali.
 2. () Ya, sebagian kecil.
 3. () Ya, separuh bagian.
 4. () Ya, sebagian besar.
 5. () Ya, seluruhnya.
29. Sehubungan dengan kerja dan komentar Tutor pada tugas anda , bagaimana perasaan anda :
1. () Sangat puas.
 2. () Puas.
 3. () Biasa saja.
 4. () Tidak puas.
 5. () Sangat tidak puas.
30. Sehubungan dengan bantuan dan dukungan dari Tutor, saya merasa
1. () Selalu dibantu.
 2. () Biasanya dibantu.
 3. () Biasa saja.
 4. () Tidak dibantu.
 5. () Tidak pernah dibantu.

31. Berapa bayaran persemester yang anda keluarkan untuk mengikuti tutorial? Rp.....,-/semester.

32. Hambatan apakah yang Anda alami sehingga tidak dapat mempelajari materi modul sebelum kegiatan tutorial?(mohon diisi semuanya).

	Ya	Tidak
1. Tidak mempunyai waktu untuk belajar.	()	()
2. Tidak mampu belajar mandiri.	()	()
3. Modul belum diterima/diambil.	()	()
4. Segan belajar, karena terlalu banyak materi	()	()
5. Hambatan keluarga.	()	()
6. Hambatan kesehatan	()	()
7. Hambatan pekerjaan.	()	()
8. Materi modul terlalu sulit.	()	()

----> 35

33. Apa alasan Anda tidak mengikuti tutorial tsb (mohon diisi semuanya).

	Ya	Tidak
1. Tidak ada waktu.	()	()
2. Tidak mengalami kesulitan dalam mata kuliah tersebut.	()	()
3. Tempat tutorial jauh	()	()
4. Tidak mengetahui jadwal.	()	()
5. Tutorial tidak wajib diikuti.	()	()
6. Gangguan alam (hujan, banjir, dan lain-lain).	()	()
7. Gangguan kesehatan.	()	()
8. Masalah keluarga.	()	()
9. Masalah keuangan.	()	()

36. Seandainya Anda menilai bahan belajar pendukung UT (modulnya) sebagai bahan belajar dalam belajar jarak jauh, bagaimana Anda mengategorikannya ?
1. () Baik sekali.
 2. () Baik.
 3. () Biasa.
 4. () Jelek.
 5. () Jelek sekali.
37. Seandainya Anda menilai Tugas mandirinya, bagaimana Anda mengategorikannya?
1. () Baik sekali.
 2. () Baik.
 3. () Biasa.
 4. () Jelek.
 5. () Jelek sekali.
38. Apakah anda merasa anda telah menerima cukup saran dan petunjuk dari Universitas (UT) ?
1. () Ya, pasti.
 2. () Ya, biasanya.
 3. () Tidak, biasanya.
 4. () Tidak sama sekali.
39. Apakah anda merasa bahwa UT telah memberikan perhatiannya pada studi anda selain pelaksanaan tutorial?
1. () Pasti.
 2. () Dalam tahap tertentu.
 3. () Biasa saja.
 4. () Tidak banyak.
 5. () Sama sekali tidak.
40. Bagaimana pendapat anda tentang perlunya menggunakan telepon dalam belajar jarak jauh :
1. () Ya, sangat diperlukan.
 2. () Dalam tahap tertentu saja.
 3. () Biasa saja.
 4. () Tidak terlalu perlu.
 5. () Sama sekali tidak perlu.

APPENDIX D

RESPONDENTS : MARITAL STATUS AND GENDER

MARITAL STATUS	G E N D E R					
	FEMALE		MALE		TOTAL	
SINGLE	130	22 %	270	46 %	400	68 %
MARRIED	24	4.1%	164	27.9%	188	32 %
T O T A L	154	26.1%	434	73.9%	588	100%

APPENDIX E

RESPONDENTS : REGIONAL CENTER AND GENDER

REGIONAL CENTER	G E N D E R					
	FEMALE		MALE		TOTAL	
JAKARTA	115	19.5%	275	46.8%	390	66.3%
PONTIANAK	39	6.4%	159	27.3%	188	33.7%
T O T A L	154	26.9%	434	73.1%	588	100%

APPENDIX F

RESPONDENTS : STUDY PROGRAM AND REGIONAL CENTERS

STUDY PROGRAM	REGIONAL CENTER					
	JAKARTA		PONTIANAK		TOTAL	
1. ECONOMIC AND DEVELOPMENT STUDY	23	3.9%	15	2.6%	38	6.5%
2. MANAGEMENT	242	41.2%	54	9.3%	297	50.5%
3. BUSSINESS ADMINISTRATION	64	11.1%	5	.9%	70	12 %
4. PUBLIC ADMINISTRATION	52	8.8%	115	19.6%	167	28.4%
5. DEVELOPMENT ADMINISTRATION	8	1.3%	8	1.3%	16	2.6%
T O T A L	390	66.3%	198	33.7	588	100%

APPENDIX G

STUDENTS SCORES ON INTRODUCTION TO BASIC SCIENCE(IAD) AND GENDER

SCORES IAD	G E N D E R					
	FEMALE	%	MALE	%	TOTAL	%
0	2	1.4	7	4.9	9	6.3
D = 1	26	18.3	46	32.4	72	50.7
C = 2	13	9.2	44	31	57	40.2
B = 3	1	.7	2	1.4	3	2.1
A = 4	-	-	1	.7	1	.7
TOTAL	42	29.6	100	70.4	142	100

STUDENTS SCORES ON MATHEMATICS AND GENDER

SCORES MATH	G E N D E R					
	FEMALE	%	MALE	%	TOTAL	%
0	1	2.4	3	7.1	4	9.5
D = 1	12	28.6	19	45.2	31	73.8
C = 2	-	-	5	11.9	5	11.9
B = 3	-	-	1	2.4	1	2.4
A = 4	-	-	1	2.4	1	2.4
TOTAL	13	31	29	69	42	100

APPENDIX H

Correlations between the learning outcomes and student background.

Correlations:	SCORE	AGE5	SEX6	MARSTAT7	WORK8	JOB9	STTJOB10	REGCENT3	STPROG4	FREQ	ESSENT
SCORE	1.0000										
AGE5	.0915	1.0000									
SEX6	.0822	.3526**	1.0000								
MARSTAT7	.1100	.7456**	.1895*	1.0000							
WORK8	-.0331	-.4786**	-.2613**	-.3495**	1.0000						
JOB9	-.0140	.2154*	.1434	.1233	-.4502**	1.0000					
STTJOB10	.0007	.2556**	.1674	.1934*	-.5871**	.4593**	1.0000				
REGCENT3	.0565	.1258	.1008	.2175*	-.1114	-.1213	.0746	1.0000			
STPROG4	.0592	.2442**	.0440	.2952**	-.1058	-.0998	.0459	.4131**	1.0000		
FREQ	-.0110	-.2669**	-.0660	-.1696	.3873**	-.1739*	-.2483**	.1687	-.1045	1.0000	
ESSENT	.0014	-.2746**	-.1135	-.1941*	.3323**	-.1170	-.2439**	.0009	-.1712	.7721**	1.0000

N of cases: 184 1-tailed Signif: * - .01 ** - .001

APPENDIX I

Correlations between the score, frequencies of tutorial,
essence of tutorial and student accademic background .

Correlations: SCORE OTHUNI12 READ14 TTDIST21 TTTIME22 TTFEE31 REGCENT3 STPROG4 FREQ ESSENTT

SCORE	1.0000																		
OTHUNI12	.0871	1.0000																	
READ14	.0864	.1062	1.0000																
TTDIST21	.0016	-.0625	.1283	1.0000															
TTIME22	.0333	-.0984	.0475	.2744**	1.0000														
TTFEE31	-.0355	.0391	.0681	.1673	.4333**	1.0000													
REGCENT3	.0565	.1175	.0908	.0695	-.2677**	-.1246	1.0000												
STPROG4	.0592	.0337	.0747	.0126	-.1579	-.1715*	.4131**	1.0000											
FREQ	-.0110	.1193	.0107	.2303**	.3515**	.6502**	.1687	-.1045	1.0000										
ESSENTT	.0014	.0309	.0163	.1910*	.5142**	.6620**	.0009	-.1712	.7721**	1.0000									

N of cases: 184 1-tailed Signif: * - .01 ** - .001

APPENDIX J

Correlations between the score, frequencies of tutorial, essence of tutorial and purpose of student in attending tutorial .

Correlations: SCORE RSKNUT23 RSNACQ23 RSNDIF23 RSNIPR23 RSNIND23

SCORE	1.0000					
RSKNUT23	-.0284	1.0000				
RSNACQ23	-.0519	.9337**	1.0000			
RSNDIF23	-.0420	.9364**	.9693**	1.0000		
RSNIPR23	-.0367	.9317**	.9624**	.9756**	1.0000	
RSNIND23	-.0300	.8989**	.9184**	.9229**	.9134**	1.0000
RSNFIL23	-.0798	.7575**	.8219**	.7928**	.7845**	.8016**
RSNOBL23	-.0319	.8627**	.9038**	.9058**	.8964**	.8496**
RSNKNO23	-.0463	.9283**	.9618**	.9772**	.9623**	.9237**
RSNCOM23	-.0264	.9242**	.9631**	.9678**	.9601**	.9134**
RSNSLV23	-.0387	.9005**	.9261**	.9467**	.9300**	.8780**
KNOWTT23	-.0245	.9102**	.9422**	.9294**	.9248**	.8998**
REGCENT3	.0565	-.0111	-.0134	-.0228	-.0154	.0240
STPROG4	.0592	-.2104*	-.2192*	-.2241*	-.2058*	-.2093*
FREQ	-.0110	.7162**	.7619**	.7377**	.7484**	.7355**
ESSENTT	.0014	.8836**	.9119**	.9211**	.9106**	.8712**

N of cases: 184 1-tailed Signif: * - .01 ** - .001

Table continues...

Correlations between the score, frequencies of tutorial, essence of tutorial and purpose of student in attending tutorial .

Correlations: RSNFIL23 RSNOBL23 RSNKNO23 RSNCOM23 RSNSLV23 KNOWTT23

RSNFIL23	1.0000					
RSNOBL23	.7433**	1.0000				
RSNKNO23	.7983**	.9054**	1.0000			
RSNCOM23	.8044**	.9111**	.9587**	1.0000		
RSNSLV23	.7888**	.8786**	.9247**	.9395**	1.0000	
KNOWTT23	.8230**	.8863**	.9417**	.9514**	.9238**	1.0000
REGCENT3	-.0250	-.0038	-.0187	-.0224	-.0426	.0130
STPROG4	-.2023*	-.1390	-.2105*	-.2134*	-.2231*	-.1875*
FREQ	.6548**	.6609**	.7490**	.7493**	.7054**	.7417**
ESSENTT	.7447**	.8521**	.9129**	.9099**	.8759**	.8836**

N of cases: 184 1-tailed Signif: * - .01 ** - .001

Correlations between the score, frequencies of tutorial, essence of tutorial and purpose of student in attending tutorial .

Correlations: REGCENT3 STPROG4 FREQ ESSENTT

REGCENT3	1.0000			
STPROG4	.4131**	1.0000		
FREQ	.1687	-.1045	1.0000	
ESSENTT	.0009	-.1712	.7721**	1.0000

N of cases: 184 1-tailed Signif: * - .01 ** - .001

APPENDIX K

Correlations between the distance and time spent and the
decrease tutorial frequency, and learning outcome

Correlations: SCORE DSCMDL24 IDENEX24 RESMDL24 SHWNDE24 INTDSC24

SCORE	1.0000					
DSCMDL24	-.0424	1.0000				
IDENEX24	-.0661	.9264**	1.0000			
RESMDL24	-.0467	.9336**	.9062**	1.0000		
SHWNDE24	-.0250	.9053**	.8691**	.9226**	1.0000	
INTDSC24	-.0392	.9185**	.9004**	.9446**	.9484**	1.0000
DSCACD24	-.0544	.8588**	.8610**	.8374**	.8533**	.8874**
DSCADL24	-.0424	.8951**	.8887**	.8920**	.9089**	.9229**
DSCMDM24	-.0400	.8672**	.8595**	.9011**	.9023**	.9298**
HISPRT24	-.0179	.9311**	.9009**	.9396**	.9281**	.9604**
DSCEXA24	-.0600	.8887**	.8985**	.9141**	.9198**	.9571**
REGCENT3	.0565	-.0108	-.0269	-.0042	-.0328	-.0208
STPROG4	.0592	-.1945*	-.1967*	-.2147*	-.1964*	-.1949*
FREQ	-.0110	.7422**	.7226**	.7425**	.7264**	.7704**
ESSENTT	.0014	.9107**	.8716**	.9174**	.9248**	.9406**

N of cases: 184 1-tailed Signif: * - .01 ** - .001

Table continues...

Correlations between the distance and time spent and the decrease tutorial frequency, and learning outcome

Correlations: DSCACD24 DSCADL24 DSCMDM24 HISPRT24 DSCEXA24 REGCENT3 STPROG4 FREQ ESSENT

DSCACD24	1.0000								
DSCADL24	.8881**	1.0000							
DSCMDM24	.8465**	.8743**	1.0000						
HISPRT24	.8943**	.9117**	.9259**	1.0000					
DSCEXA24	.8773**	.9189**	.9031**	.9319**	1.0000				
REGCENT3	-.0401	-.0861	-.0033	-.0363	-.0666	1.0000			
STPROG4	-.1724*	-.2281**	-.1883*	-.1830*	-.1991*	.4131**	1.0000		
FREQ	.7077**	.7180**	.7526**	.7486**	.7669**	.1687	-.1045	1.0000	
ESSENT	.8555**	.9108**	.9032**	.9361**	.9020**	.0009	-.1712	.7721**	1.0000

N of cases: 184

1-tailed Signif: * - .01 ** - .001

APPENDIX L

Correlations between reading the module first before it is discussed in tutorial, and attendance at tutorials, positive perceptions of tutorials and learning outcomes.

Correlations: SCORE STFISO34 STINDN34 TTFAR34 NOSPRT34 TOOLD34

SCORE	1.0000					
STFISO34	-.0908	1.0000				
STINDN34	-.0964	.2696**	1.0000			
TTFAR34	-.0524	.1798*	.2678**	1.0000		
NOSPRT34	.0597	.3036**	.2345**	.2600**	1.0000	
TOOLD34	.0089	.1098	-.0592	-.0127	.0664	1.0000
DFSELF34	-.0573	.3112**	.3700**	.2608**	.2733**	.0836
DFGROP34	-.0272	.0898	.1603	.1681	.1546	.0118
FUNPRB34	-.0176	.0849	.1192	.1487	.2432**	.0367
BCGRNT34	.0261	.2900**	.2637**	.1797*	.3166**	.1723*
DIFJOB34	-.0115	.0472	.1792*	.1804*	.0351	.1422
DIFCOM34	-.0088	.2131*	.1936*	.1608	.3703**	.0323
FAMPRB34	.0065	.1106	.1839*	.1521	.0119	.1245
DIFOTH34	.0125	-.1423	.1374	.0128	-.0338	-.0669
UTMTD35	.0210	.0317	.0402	.0315	.0517	.1770*
REGCENT3	.0571	-.1201	.0470	-.0876	-.0698	-.0002
STPROG4	.0590	-.1358	-.0282	-.0269	-.0703	.0188
FREQ	-.0105	-.0758	.0702	-.1422	-.0145	-.0178
ESSENTT	.0019	-.0306	.0798	-.1046	-.0383	-.0338

N of cases: 184

1-tailed Signif: * - .01 ** - .001

Table continues...

Correlations between reading the module first before it is discussed in tutorial, and attendance at tutorials, positive perceptions of tutorials and learning outcomes.

Correlations: DFSELF34 DFGROP34 FUNPRB34 BCGRNT34 DIFJOB34 DIFCOM34

DFSELF34	1.0000						
DFGROP34	.3134**	1.0000					
FUNPRB34	.1686	.0885	1.0000				
BCGRNT34	.3287**	.1145	.1901*	1.0000			
DIFJOB34	.2356**	.2454**	.0160	.1142	1.0000		
DIFCOM34	.3566**	.3064**	.1487	.1877*	.2453**	1.0000	
FAMPRB34	.2746**	.1995*	.2328**	.0997	.2786**	.1532	
DIFOTH34	.0783	-.0180	.1589	.0434	.1013	.1100	
UTTMTD35	.0470	-.0048	.0795	.1061	.0390	.0043	
REGCENT3	-.0355	.0731	.1399	.0459	.0229	.0066	
STPROG4	-.0269	-.0633	-.0153	-.0494	-.0340	-.0076	
FREQ	-.0664	-.2058*	.0348	.0205	-.2695**	-.1184	
ESSENTT	-.0299	-.1238	.0030	.0973	-.2686**	-.0249	

N of cases: 184

1-tailed Signif: * - .01 ** - .001

Table continues...

Correlations between reading the module first before it is discussed in tutorial, and attendance at tutorials, positive perceptions of tutorials and learning outcomes.

Correlations: FAMPRB34 DIFOTH34 UTTMTD35 REGCENT3 STPROG4 FREQ ESSENTT

FAMPRB34	1.0000						
DIFOTH34	.1471	1.0000					
UTTMTD35	.1611	.1274	1.0000				
REGCENT3	.0895	-.0205	.0551	1.0000			
STPROG4	.0284	.0870	.0176	.4134**	1.0000		
FREQ	-.0083	.0204	-.0275	.1684	-.1044	1.0000	
ESSENTT	-.0067	.0652	.0203	.0005	-.1711	.7720**	1.0000

N of cases: 184

1-tailed Signif: * - .01 ** - .001

APPENDIX M

Correlations between specific tutoring behaviour, and attendance at tutorials, positive perceptions of tutorial and learning outcomes.

Correlations: SCORE UTTMTD35 UTMDL36 UTASGN37 UTEXPL38 UTSERV3

SCORE	1.0000					
UTTMTD35	.0219	1.0000				
UTMDL36	.0843	.4768**	1.0000			
UTASGN37	-.0469	.3683**	.5269**	1.0000		
UTEXPL38	-.0320	-.0804	-.1258	-.1760*	1.0000	
UTSERV39	.1085	.2752**	.3374**	.2780**	-.3661**	1.0000
USETLP40	.0762	.0116	.0188	-.0102	.1214	.0257
TLPISO41	.1088	.0325	.0170	.0772	.1056	.0656
TTSVRT42	.0585	.2117*	.1183	.1557	.0580	.1998*
REGCENT3	.0565	.0544	.1254	.1565	-.1203	.2171*
STPROG4	.0592	.0179	.0641	-.0028	-.0434	.1390
FREQ	-.0110	-.0281	-.0368	.0469	-.1084	.1302
ESSENTT	.0014	.0196	-.0636	.0031	-.1149	.1587

N of cases: 184

1-tailed Signif: * - .01 ** - .001

Table continues...

Correlations between specific tutoring behaviour, and attendance at tutorials, positive perceptions of tutorial and learning outcomes.

Correlations: USETLP40 TLPISO41 TTSPRT42 REGCENT3 STPROG4 FREQ ESSENTT

USETLP40	1.0000						
TLPISO41	.7186**	1.0000					
TTSPRT42	.0643	.0292	1.0000				
REGCENT3	-.2230*	-.1804*	.2054*	1.0000			
STPROG4	-.0841	.0436	.0485	.4131**	1.0000		
FREQ	-.1784*	-.2272**	.3474**	.1687	-.1045	1.0000	
ESSENTT	-.0621	-.1612	.2633**	.0009	-.1712	.7721**	1.0000

N of cases: 184 1-tailed Signif: * - .01 ** - .001

APPENDIX N

Correlations between student perceptions of tutorial and learning outcomes.

Correlations: SCORE DIFNTM32 DIFSTD32 DIFMDL32 DFHEST32 DFFAM32

SCORE	1.0000					
DIFNTM32	-.0249	1.0000				
DIFSTD32	-.0157	.7769**	1.0000			
DIFMDL32	-.0419	.8021**	.8215**	1.0000		
DFHEST32	-.0531	.8037**	.8785**	.8196**	1.0000	
DFFAM32	-.0361	.8474**	.8764**	.8761**	.8775**	1.0000
DFHELT32	-.0368	.8522**	.8851**	.8824**	.8907**	.9473**
DFWORK32	-.0212	.8595**	.7996**	.8294**	.8279**	.8942**
DFMDL32	-.0184	.7930**	.8469**	.8012**	.8505**	.8603**
REGCENT3	.0565	-.0156	.0536	-.0364	.0817	-.0160
STPROG4	.0592	-.1367	-.2005*	-.2078*	-.1510	-.2132*
FREQ	-.0110	.6618**	.7078**	.6695**	.7322**	.7313**
ESSENTT	.0014	.8314**	.8154**	.8443**	.8692**	.9104**

N of cases: 184

1-tailed Signif: * - .01 ** - .001

Table continues ...

Correlations between student perceptions of tutorial and learning outcome.

Correlations: DFHELT32 DFWORK32 DFMDL32 REGCENT3 STPROG4 FREQ ESSENT

DFHELT32	1.0000						
DFWORK32	.8916**	1.0000					
DFMDL32	.8743**	.8156**	1.0000				
REGCENT3	.0138	-.0176	.0192	1.0000			
STPROG4	-.2138*	-.1706	-.1720*	.4131**	1.0000		
FREQ	.7484**	.7410**	.6813**	.1687	-.1045	1.0000	
ESSENTT	.9046**	.8760**	.8400**	.0009	-.1712	.7721**	1.0000

N of cases: 184

1-tailed Signif: * - .01 ** - .001

APPENDIX O**LIST OF REDUCED VARIABLES****A. Student Background.**

- V 5 Age.
- V 6 Sex.
- V 7 Marital Status.
- V 8 Work.
- V 9 Main Job.Status work.
- V 10 Status jobIncome/salary.

B. Academic back ground.

- V 12 Higher education attended except UT.
- V 14 Read articles/journal/books/relevant to the study being pursued.

C. Ease Access.

- V 26 Distance from home to the tutorial place.
- V 27 Time spent to get to the tutorial from home.
- V 55 Pay for intensive tutorial.

D. Preparation.

- V 52 Read the modules before attending tutorial.

E. Motivation to attend Tutorial.

- V 28 To know better about UT and Regional Center.
- V 29 To get acquainted with other students.
- V 30 To ask some difficulties in the course.
- V 31 To improve the learning spirit.
- V 32 To know better about independent learning.
- V 33 To fill out an empty time.
- V 34 Tutorial as an obligation.
- V 35 To add knowledge.
- V 36 To communicate with tutor.
- V 37 To solve the problem in moduls.
- V 38 To be knowledgeable about tutorial.

F. Tutorial essence for the students.

- V 49 Could get the essence of Tutorial.
- V 50 An interesting Tutorial.
- V 51 Improve student knowledge.

G. Tutoring Behavior.

- V 39 Discussing the main features of module.
- V 40 Identifying the points which would be in the exam.
- V 41 Resuming from materials in module.
- V 42 Showing how to do independent learning.
- V 43 Encouraging an intensive discussion.
- V 44 Discussing about academic, administration and students.
- V 45 Discussing module mistakes.
- V 46 Discussing the module page by page.
- V 47 Encouraging the high spirit to study.
- V 48 Discussing the last exam semester items test.

H. Students difficulties.

- V 76 Feel isolated.
- V 77 Difficult to study independently.
- V 78 Far away from Tutorial place.
- V 79 Have not enough support from UT.
- V 80 Feel too old.
- V 81 Difficult to know self ability in study
- V 82 Difficult to join study group.
- V 83 Funding problem.
- V 84 My background not supported the course
- V 85 Difficulty with my job.
- V 86 Difficult to communicate with Regional Center.
- V 87 Family problem.
- V 88 Other.

I. The problem students not to study the modules before tutorials.

- V 56 Have no time to study.
- V 57 Can not study independently.

- V 58 Modules not yet received.
- V 59 Hesitate to study because too much material.
- V 60 Family problem.
- V 61 Health problem.
- V 62 Work problem.
- V 63 The modules are too difficult.

J. Students opinion about system in Universitas Terbuka.

- V 89 Tutorial as one method of distance education.
- V 90 UT module as one of the methods of distance learning,
- V 91 UT independent assignment as one of methods of distance learning
- V 92 UT enough support explanation
- V 93 UT has given you attention/support you on your study.
- V 94 The telephone used for distance learning system?
- V 95 Using telephone as a communication in distance learning could help you to feel less isolated?
- V 96 Face-to-face tutorial to support your study?

G. Frequencies of taking Tutorial.

- V 15 Taking IAD Tutorial.
- V 16 Taking Mathematics Tutorial.

APPENDIX P

Variable Labels

REGCENT3	'Regional Center'
STPROG4	'Study Program'
AGE5	'Student age'
SEX6	'Sex'
MARSTAT7	'Marital status'
WORK8	'Do you work?'
JOB9	'Your main job'
STATJOB10	'Status of your job'
FSCHOOL11	'Finish your high school'
OTHUNI12	'Study in other University before'
HICERTIF13	'The highest certificate'
READ14	'Read an article/magazine/book connected with your study program in UT?'
IAD15	'Did you take IAD (Intro. to Basic Science)?'
FREQIAD16	'How many times per semester did you take the tutorials?'
IADCAM17	'Tutorial IAD at UT Campus'
IADPSM17	'Tutorial IAD at PSM UT'
IADKBM17	'Tutorial IAD at KBM UT'
TTEKON18	'Take tutorials Economical Statistical (EKON 4216)'
TTMANA18	'Take tutorials for Management Mathematics (MANA 4110)'
TTADNE18	'Take tutorials for Statistics I (ADNE 4215)'
TTADNI18	'Take tutorials for Mathematics (ADNI 4210)'
TTTIMES19	'Frequencies of taking the tutorials per semester'
TPLACE20	'If your answer no.18, Yes, Where did you take the tutorials?'
TTDIST21	'How far your place to tutorial held'
TTTIME22	'How long you need to go to the Tutorial ?'

RSNKNW23 'To know better about and Regional Center'
RSNACQ23 'To get acquainted with other students'
RSNDIF23 'To ask about some difficulty in the course'
RSNIPR23 'To improve the learning spirit'
RSNIND23 'To know better about independent learning'
RSNFIL23 'To fill out empty time'
RSNOBL23 'Tutorial as an obligation'
RSNKNW23 'To add knowledge'
RSNCOM23 'To communicate with tutor'
RSNSLV23 'To solve the problem in modules'
RSNKNW23 'To be knowledgeable about tutorial'
DSCMDL24 'Discuss the main feature of modules'
IDENEX24 'Identify the points which would be in
the exam'
RESMDL24 'Make resume from material in modules'
SHWNDE24 'Show how to do independent learning'
INTDSC24 'Encourage intensive discussion'
DSCACD24 'Discuss about academic, administration and
students'
DSCMDL24 'Discuss modules mistakes'
DSMDLP24 'Discuss the module page by page'
HISPR24 'Encourage the high spirit to study'
DSCEXA24 'Discuss the last exam semester items test'
TTESSN25 'Can you get the essence of tutorial material
which is explained by tutor'
TTINTR26 'Did the tutor present interesting tutorial?'
TTIMPR27 'Did tutorial improve your knowledge?'
LRNMDL28 'Did you study the module before come to
the tutorial?'
TTWORK29 'What did you think about tutor's work an
comment to your assignment?'
TTHELP30 'As tutor help and support, how do you feel?'
TTFEE31 'How much did you pay for tutorial ?'
DIFNTM32 'The Problem :no time to study'

DIFSTD32 'The Problem :Can't study independently'
 DIFMDL32 'The Problem :Modules not yet received'
 DFHEST32 'The Problem :Hesitate to study because
 too much material'
 DFFAM32 'Family problem'
 DFHELT32 'Health problem'
 DFWORK32 'Work problem'
 DFMDL32 'The modules are too difficult'
 NTMFTT33 'Have no time'
 NPRBCR33 'Having no problem with these course'
 TTFAR33 'Tutorial place was too far away'
 NSCHED33 'Did not know the schedule'
 TTNOBL33 'Tutorial is not obligation'
 DISSAS33 'Disaster (rain, flood, etc)'
 HLTHPR33 'Health problem'
 FAMPRB33 'Family problem'
 FUNDPR33 'Funding problem'
 TTNINT33 'The tutorial is not interesting.'
 SCDOU33 'The schedule is not as planned'
 NOTOTH33 'Others'
 STFISO34 'Feel isolated'
 STINDN34 'Difficult to study independently'
 TTFAR34 'Far away from tutorial place'
 NOSPRT34 'Have not enough support from UT'
 TOOLD34 'Feel too old'
 DFSELF34 'Difficult to know self ability in study.'
 DFGROP34 'Difficult to join study group'
 FUNPRB34 'Funding problem'
 BCGRNT34 'My background did not support the course'
 DIFJOB34 'Difficulty with my job'
 DIFCOM34 'Difficult to communicate with Regional
 Center'
 FAMPRB34 'Family problem'
 DIFOTH34 'Other'

UTTMTD35	'If you examine UT tutorial as one of methods of distance learning, how do you categorize it?'
UTMDL36	'If you examine UT modules as one of the methods of distance learning, how do you categorize it?'
UTASGN37	'If you examine UT independent assignment as one of methods of distance learning, how do you categorize it?'
UTEXPL38	'Did you feel that you have had enough support explanation from UT ?'
UTSERV39	'Despite tutorial, did you think that UT has given you attention/support you on your study?'
USETLP40	'How do you think about the telephone used for distance learning system'
TLPISO41	'Do you think that using telephone as a communication in distance learning could help you to feel less isolated?'
TTSPRT42	'How do you think face-to-face tutorial to support your study?'
IAD	'IAD (Introduction to Basic Science) score'
MATH	'MATH (Management Mathematics) score'

VITA

Surname : Sari Given Name : Lisdiana
Place of Birth: Bandung Date of Birth : 2 January 1961

Educational Institution Attended:

Institut Keguruan dan Ilmu Pendidikan, Indonesia	1979 to 1984
University of Victoria, Canada	1990 to 1994

Degree Awarded:

B. Ed	IKIP Bandung	1984
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Honour and Awards:

CIDA Scholarship	1990 to 1994
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Title of Thesis/ Dissertation : Improving the Face-to-Face Tutorial System of Distance Education in Universitas

Terbuka

Author: 

(Signature)

LISDIANA SARI

(Name)

October 21, 1994

(Date)