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ABSTRACT

This description of a project offering live television transmissions as an addition to the University of Regina's (Saskatchewan, Canada) distance education system includes: (1) an introduction; (2) a description of and rationale for the evaluation model used; (3) a description of the data collection process; (4) a summary of the findings; and (5) an assessment of the effectiveness of the project based on the findings. The introduction includes descriptions of the program, class delivery procedures, and the limitations of the evaluation to the system used to deliver instruction. The evaluation model is based on Robert Stake's "Countenance" model. Data collection procedures include the use of questionnaires and reporting forms, samples of which are appended. The findings include antecedents, information on procedures both inside and outside of class, and outcomes. The report on the evaluation discusses the support system, technical system, students, and student/instructor interaction, and provides some general comments on instruction. It was concluded that the project was successful, and the data collected and analyzed will lead to further evaluation, refinement, and development for the use of technology in the distance education program. The appendices include the evaluation model, questionnaires, reporting form and analysis of data forms, class outlines, and a report of observations. (DJR)

A SYSTEM EVALUATION

OF THE

UNIVERSITY OF REGINA

TELEVISION PROJECT

1984

EDUCATIONAL STUDIES GROUP

FACULTY OF EDUCATION

UNIVERSITY OF REGINA

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CONDUCTED BY:

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On Behalf of the Educational
Studies Group of the Faculty of Education
under contract with
University Extension, University of Regina

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FOREWARD

On behalf of the Extra-Session Credit Programs, University Extension, it is a pleasure to receive a report with such encouraging overtones for distance education and the delivery of credit programs to Saskatchewan residents.

The spark for this project started with a graduate student from this University. This graduate administration student, employed by Saskatchewan Telecommunications, and the Dean of Administration saw the potential for technology and the use of fibre optics for live television instruction. Further discussions followed and, eventually, in concert with the Cypress Hills, Coteau Range and Parkland Community Colleges, four classes and instructors were identified. Professors Chadwick, Hunter, Purse and Marner truly pioneered live television teaching in Saskatchewan.

Since the University of Regina has been teaching at a distance for many years and since this was an innovative approach to distance education, it was imperative that an evaluation be done and objective data obtained. Expertise from the Faculty of Education was obtained and Professors Burgess and Kesten and their associates and students should be commended for the report which follows.

The data collected and analyzed in this report will lead to further evaluation, refinement and development for the use of technology in the delivery of educational opportunities.

A very special thank you is extended to Mr. Gordon Jackson, Director of Audio-Visual Services and his associates who gave an extra and timeless effort. Mrs. Gae Jones, Ms. Carolyn Montgomery and Mrs. Kathy Waithman of the Extra-Session Credit Division were patient and dexterous with their invaluable aid for this project.

In conclusion, the team work of Sask. Tel, Coteau Range, Cypress Hills and Parkland Community College and the University of Regina for the fulfillment of educational needs is most encouraging.

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INTRODUCTION

The University of Regina has offered distance education to its students for a number of years. This has primarily taken the form of off-campus and "teleconferencing" - i.e. use of telephone hook-ups between a professor located on the University campus and students located in their home communities. Beginning with the Fall, 1984 semester, live television transmissions have been added to this distance education system.

PROGRAM DESCRIPTION

Four university classes (Administration 250, Computer Science 270, Computer Science 271, Film 100) were offered via live television transmission and telephone communication during the Fall 1984 semester. The communities in which these classes were offered were Moose Jaw, Yorkton, Swift Current and Melville. The classes were also offered to students on campus, who would be the "studio audience". The enrollment for these classes are indicated in Table 1.

TABLE 1

Initial Enrollment
T.V. Project
September, 1984

	REGINA	MOOSE JAW	YORKTON	SWIFT CURRENT	MELVILLE	TOTAL
ADMIN 250	26	10	2	6	0	44
CS 270	11	9	14	16	7	57
CS 271	4	5	10	8	0	27
FILM 100	16	9	3	15	0	43
TOTAL	57	33	29	45	7	171

CLASS DELIVERY

Each class met one night a week (ADMN. 250 - Tuesday, Film 100 - Wednesday, CS 271 - Monday, CS 270 - Thursday) from 7:00 p.m. to 10:30 p.m. and was broadcast live from Room 1.11 in the Education Building on the University of Regina campus .

Students who were enrolled as on-campus students attended in Room 1.11. The class, presented in person to these students, was broadcast live to the off-campus centres. Audio contact was maintained with the off-campus centres through the television transmission as well as telephone connections for incoming communication. (Students in off-campus locations would dial in to Room 1.11, causing lights to flash on the telephone console.)

Room 1.11 is a classroom which has been modified to include a transmission control room. Two color T.V. cameras were used as well as a speaker phone. Two T.V. cameramen were required for each class as well as at least one person in the control room.

EVALUATION PROJECT

After a series of meetings and dicusssions between members of University Extension and interested faculty members, it was agreed that an evaluation be conducted of this T.V. project. This project was being implemented during the fall semester of 1984. The primary focus of the evaluation would be the "system of delivery" and its components. It was also agreed that no evaluation of the classroom instructional behavior and technique of the instructor be undertaken.

The "system of delivery" as defined in this evaluation project includes: a) support systems, b) technical systems, c) students, and d)

student/instructor interactions. These reflect the technical aspects of the "system of delivery", as well as the impact of this system.

Support systems include a view of the roles of Extension, A.V. Services, the community colleges, and the individual professor's department. These roles include assistance to the instructor in preparation and delivery of class content, assignments and tests, as well as assistance to enrolling students.

The technical systems considered were those systems in place which were used to transmit the television and telephone signals between Room 1.11 and the off-campus centres. In particular the reliability (i.e. number of breakdowns, etc.) was considered as well as quality of transmission. echnical aspects such as quality and efficiency of the hardware was not considered.

The impact of the delivery system on student and students/professor interaction was considered. The potential of differences in student achievement for different groups of students was studied. The accessibility of these classes to students and the student's perception of the value of classes delivered through this type of system was considered. A major concern in this area was the affect of the system of delivery on the ability to interact and the nature and quality of that interaction between professor and student; particularly the effect on students in off-campus centres.

LIMITATIONS

Although planning for this project had been in progress for sometime, it was not until a meeting on August 28, 1984 that there was agreement to an evaluation and the form it might take. The form would be similar to the Stake Countenance model. The evaluators and the Assistant Dean of Extension, Jim Carefoot, met on September 12, 1984 to clarify the evaluation process, the parameters, and to finalize the evaluation itself.

Following this a proposal for the evaluation had to be written. Data collection instruments had to be developed. Research and data collection assistants located and trained in the use of the instruments. All of these activities took time. The evaluation did not begin until the second week in October which meant that much of the intended antecedent data from instructors was missing or only able to be retrieved on a memory basis. It was impossible to secure antecedent data from the students.

Fortunately, class sessions had been video-taped and it was possible to go back to the second week of classes to do observations.

All of the above have a limiting effect upon the notions of "intentions" and "antecedents". Because of this limitation, the Stake model is compromised somewhat and some aspects of logical and empirical contingency are seriously affected.

Although these circumstances limit, it is not felt that they render the evaluation invalid.

DESCRIPTION AND RATIONALE FOR EVALUATION MODEL

The evaluation of this project was based upon the "system of delivery" of the classes. The evaluation methodology was a modified Robert Stake "Countenance" Model. In this model there are two matrices of consideration: description and judgment. In this evaluation it was decided that only the description matrix would be employed.

A detailed description of the model is provided as an appendix (A). However, a brief operational description follows. The intended antecedents (variables) are identified, the manner in which the activities are intended to proceed are described, and the intended (or expected) outcomes are stated.

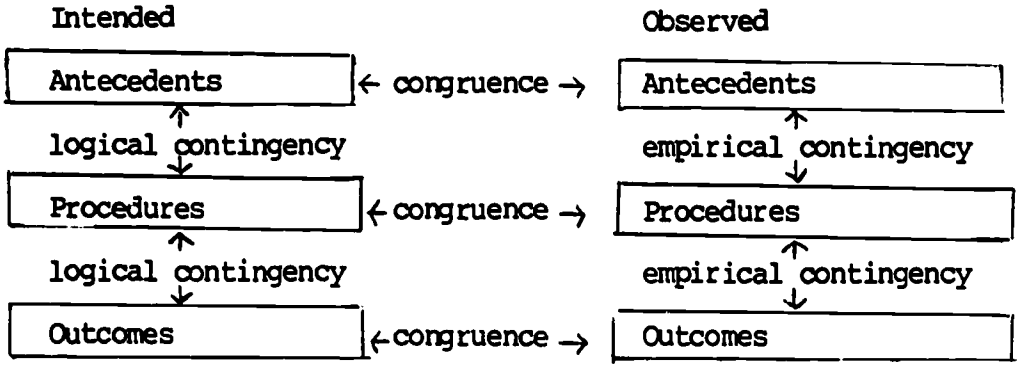
Intended
Antecedents
Procedures
Outcomes

These descriptions are then observed and compared. What antecedents were actually present? How did activities actually proceed? And what/which outcomes were achieved?

Intended	Observed
Antecedents	Antecedents
Procedures	Procedures
Outcomes	Outcomes

Descriptive Matrix

The evaluation questions relate to determining the degree of logical and empirical contingency between antecedents, procedures and outcomes; as well as the degree of congruence between intentions and observations.



Appropriateness of the Model for this Evaluation

University Extension and the faculties and departments engaged in this project wanted to know if the off-campus delivery of the classes would be comparable to on-campus classes. Delivery in this context was seen from the point of view of the content presentation and student achievement. Achievement was seen as the level of grades achieved in this class. Another aspect of the delivery system notion had to do with how well instructors were able to use the technology to deliver the classes.

The university units involved were asking what outcomes can be achieved using this delivery technology. The Stake model is designed to ask and answer questions of this type. It identifies conditions present, procedures engaged in and outcomes. The model focuses evaluation activities by comparing contingencies, congruencies, intention and actual situations.

DATA COLLECTION

This evaluation is based upon data collected from the instructors, the students, and the support systems.

The four instructors completed a detailed questionnaire early in the semester. This instrument (Appendix B) asked for intended antecedent conditions and factors, intended procedures to be employed - inside and outside of class - and intended outcomes. Each question asked for an explanation or additional comments. Additionally, the instructors were offered the opportunity to expand upon their answers when the research assistant collected the questionnaires.

Following the completion of the semester the instructor completed a questionnaire (Appendix C) which surveyed essentially the same areas as indicated above. Three of the four instructors completed this questionnaire.

Each week, commencing with the week of October 29th, 1984 (the 8th week of the semester) the four instructors were asked to complete a form (Appendix D) on which they were to record what had transpired in the previous lecture* and what was planned for the current week's lecture with respect to content, teaching methodology, student participation, out-of-class student activities; attendance and technical problems were reported for the previous week.

As noted, previously, this data collection procedure did not begin until after the mid-semester break. Due to problems experienced with the pick-up and delivery system, some reports are missing. The data for this evaluation comes from 14 reports and covers the period October 22 through December 3rd, 1984.

*lecture means the same thing as lesson - although there were exceptions, most class meetings were lectures and the most common instructional activity was lecturing.

Lectures were observed rather extensively - seven live observations on-campus and one in Moose Jaw. The video tapes of nine lectures were viewed. These seventeen observations represents 44% of the lectures held between September 17th and November 29th (cancelled lectures and lectures devoted to mid-term tests have been deducted from the possible total of 44 lectures during this period).

Data were secured from off-campus students in three ways. During the semester the students in Computer Science 271 in Moose Jaw were interviewed. The interview used in Moose Jaw become the basis for a structured telephone interview which was conducted during the third week of November with 9 students selected at random from those in the locations other than Moose Jaw (i.e Swift Current, Melville and Yorkton).

All students who completed the classes received a questionnaire (Appendix E) following the completion of the classes. Thirty-three of the 100 off-campus students returned the questionnaire (33%). Of the 50 on-campus students, 31 returned the instrument (62%). The over-all response to the questionnaire was 64 returns (43%).

Class outlines (Appendix F) were collected as antecedent intentions and the grading sheets as observed outcomes.

Both formal and informal discussions of the total project were held with personnel in the Faculty of Extension and A.V. Services.

FINDINGS

The data collection procedures provided information about this television project in three specific areas. First, antecedent conditions which pertained to all students, professors and support services were obtained. As well, data was gathered concerning the procedures which took place during the project were described. Finally, outcomes, in terms of student achievement and attitude, were identified.

ANTECEDENTS

The students who attended in Regina as on-campus registrants were, in the main, directed to this class by advisors or requested registration as a result of reading the regular fall timetable or calendar. Most of the off-campus students responded to newspaper advertisements or to information distributed by the local comunity college. Most students enrolled in a particular class because it was a requirement for their degree; although many off-campus students indicated that they enrolled in the course because of personal interest.

Student expectations of professors reflected some of the "newness" of the situation. Students wanted professors to explain the course outline and provide a description for class procedures as well as explain the use and limitations of the technical equipment. Students also indicated that a personal meeting before classes began would be beneficial.

Students did not expect these courses to be more difficult than other courses but they did expect the professors to be good communicators, knowlegeable, and organized.

Professors were asked to discuss antecedents in terms of the following: planning support (both instructional and technical), instructor characteristics, expectations (student and student contact) and class evaluation.

The instructors felt a need to become aware of the experiences other and former instructors had encountered with distance education. They perceived this contact as being beneficial in planning and structuring a television class.

Most felt that Extension, A.V. Services and their own departments provided satisfactory to excellent planning support.

These instructors were satisfied with their input into the timetabling and scheduling of their class. The one instructor, who was not satisfied, had not been involved in the timetabling process and felt he should have been more involved. Instructors were also satisfied with the amount of time provided for planning. All but one instructor had all lesson plans made before the class started. The instructor who was the exception wished to wait until he had some experience with the medium before he completed more than the first few lesson plans. All instructors made the point that more time is necessary for planning this type of class.

The instructors believed that to be successful in this situation they would need to possess basically the same characteristics as any good instructor. Those characteristics which were identified as unique to this approach were: personal mannerisms which are effective via television, an ability to use instructional aids very well, and an ability to motivate through charisma or acting ability.

The instructors felt that there should be some effort to contact in person, and get to know, the students who would be attending class at the off-campus locations.

Also, the professors believed that their students would prove to be mature, self-motivated and anxious to learn practical and worthwhile things. Instructors did not feel that prerequisites other than those

normally attached to these classes should be imposed upon students participating in television classes.

The instructors agreed that the grading practices would be the same for these classes as for any other on-campus class. Assignments, term papers, mid-terms and final exams were the normal evaluation procedures for these classes.

PROCEDURES

Students were attracted from all off-campus locations for Computer Science 270 and all but Melville for Computer Science 271, Administration 250 and Film 100. Off-campus students were able to obtain texts and other class materials in a satisfactory manner, however there was some difficulty in accessing extra materials necessary for term work. In particular, off-campus students in the Computer Science courses found accessing the community college computer labs quite difficult due to the heavy demands placed on the labs.

The turn-around time for assignments and mid-term tests was seen by off-campus students as somewhat of a problem. Students indicated that subsequent assignments were sometimes due before earlier assignments had been graded and returned.

The most common point of criticism made by students concerned the technology. In particular, the quality of picture, the subtitles in the case of Film 100 and the telephone arrangement were identified by many of the off-campus students. The subtitles included in many of the films were completely lost to off-campus locations. The mechanics of using the telephone arrangement and the delays in contacting the instructor (or the instructor not noticing the flashing light) were frustrating and inhibiting to the students to the extent that they often did not bother to call in. Despite these problems most students felt that their ability to receive assistance, advice and/or further information from the professor was not severely hampered by the use of the telephone and television.

Technical problems, as expected, were at the top of the list of major concerns. Virtually every session was affected by a technical problem of one sort or another. These ranged from minor experiences such as crackling

noises on the speakers to totally losing one of the off-campus locations. These problems were usually quickly rectified by the technical support staff and compensated for by the professor.

Use of blackboard, overhead projection, instructor's voice, body movements, mannerisms, etc. and camera work were commonly cited problems. Very often off-campus students were unable to see the blackboard or overhead projection because of transmission difficulties. The chalk writing was blurred and often the projections were distorted. It was felt that the camera did not remain focussed on the material for a long enough time.

The instructors "acting" ability and camera awareness were vital components. The student complained that too often instructors would not speak clearly or would talk facing the chalkboard rather than the camera - both of these did not allow for clear audio transmission. Also the noise level transmitted made it very difficult for off-campus students to hear questions asked by students in Regina and especially by students at other off-campus locations. Therefore, if the instructor was inaudible or neglected to repeat the question, many off-campus students were not able to follow the discussion.

Recording the interaction between professor and students both on and off-campus was an integral part of the data collection procedure. Table 2 illustrates the generally lower level of student/professor interaction for those students in off-campus locations. (This Table is taken from Appendix G).

TABLE 2

COMPARISON BETWEEN CLASSES*

CLASSES	CS 271	ADMIN 250	FILM 100	CS 270
Time taken to check remotes				
minutes	6.53	2.56	6.17	8.59
Questions from on campus				
number	25.33	5.67	6	33.25
minutes	10.80	7.53	2.97	27.38
Questions from off campus				
number	12.33	2.33	5.33	12.34
minutes	10.67	2.89	8.47	17.94
Questions asked at breaks				
average total number	18	4	2.67	16.75
Questions directed to remotes				
number	1.33	3.67	0.67	1.75

*Figures used are average

The number of questions, particularly to the off-campus students decreased as the semester progressed. As well, incoming questions from off-campus students decreased over the semester. However, the amount of time spent on questions and answers remained basically consistent over the semester. A frustration with the telephone hook-up was most often cited as the main reason for the decrease in instructor/student interaction. This invariably led to greater interaction between students at the off-campus locations. Student discussions, seemingly independent of the "action" on the T.V. were reported as valuable experiences.

Lectures for all classes followed basically similar patterns. The lectures usually included an introduction and check-in with the off-campus centres. This was followed by a reasonably long lecture (40 - 70 minutes) followed by a break. One instructor presented a case study before the

break. In some instances, the break was planned to be an opportunity for phone-in questions; in others the questions followed the breaks. In three classes another long learning activity (case study/lecture) occurred followed by a break, followed by another work or lecture session. The exception was the Film 100 class where, following the break, the film was shown and subsequently discussed.

The pattern described above is consistent with both the instructor's plans for each class and the activities which were in fact carried out during the lectures. In fact, there was very little variation between the instructor's plans and the actual instruction. What little variation there was, generally was as a result of a technical problem or a substitute instructor attending class.

Data was solicited from instructors regarding student attendance. Although this information was reported by the instructors for only one portion of the total semester (6 classes out of a potential 13 class meetings) the indications were that attendance was very high and very regular - overall attendance for the 6 classes reported was above 90%.

Where there was an opinion expressed by instructors, it was that the departmental support for pre-planning was satisfactory. For two of the instructors this was less of a concern because the instructor had been in the department for some time and/or had previously taught off-campus by means of some sort of technology.

Almost all of the off-campus and night classes are organized and delivered by Extra-Session Credit Degree Programs. The off-campus division of the Faculty of Extension. This division has had extensive experience with teleconferencing classes as well. It would be expected that the division would make the plans for the vehicle of delivery, the sites, the classes, and the external relationships with various agencies. The Division did all of these preliminary activities for this group of classes.

In addition, numerous meetings were held with Deans and Department Heads as well as instructors in order to anticipate and plan for this project. The notion to evaluate the project was generated primarily by these people.

It appears that there was an assumption by the Division that it had done its work prior to the commencement of the classes and did not have any particular role to play during the semester other than to respond when needed.

The evaluation of what happened or was perceived to have happened by the instructors and students in the classes suggests some particular areas of concern.

Instructors would have preferred to have received some general guidelines concerning appropriate practices from those with teleconferencing or T.V. teaching experience. In the one instance where there was sharing of what was known there were positive attitudes expressed.

During the semester the off-campus students experienced difficulties with the community colleges which might have been planned for in advance by the college and Extension. Some examples are: an inability to get time on the community college computers, slow forwarding and return of assignments and inappropriate location of class in relationship to telephone access.

OUTCOMES

Outcomes can be measured in terms of enrollments, relative achievement, attitudes and experiences. Table 3 describes the enrollment patterns for this project. Fifty-seven students enrolled in the on-campus sections of the four classes and 114 students enrolled in the off-campus sections. Of the 57 on-campus students, 48 or 84.2% passed their classes while 90 of the 114 off-campus students were successful in completing their class.

TABLE 3

Enrollments, Passes, Fails & Withdrawals by Course & Location
Television Project
December, 1984

	ADMIN 250	CS 270	CS 271	FILM 100
On-Campus				
Enrolled	26 - 100%	11 - 100%	4 - 100%	16 - 100%
Passed	23 - 88.5%	8 - 72.7%	3 - 75%	14 - 87.5%
Failed	0 - 0%	2 - 18.2%	0 - 0%	0 - 0%
Withdrew	3 - 11.5%	1 - 9.1%	1 - 25%	2 - 12.5%
Off-Campus				
Enrolled	18 - 100%	46 - 100%	23 - 100%	27 - 100%
Passed	15 - 83.3%	39 - 84.8%	12 - 56.5%	23 - 85.2%
Failed	1* - 5.5%	6 - 13.0%	2 - 8.5%	2 - 7.4%
Withdrew	2 - 11.1%	1 - 2.2%	8 - 34.8%	2 - 7.4%

* this student has a deferred exam and therefore did not receive a grade

Table 4 describes the class averages for each class according to an on or off-campus location. These class averages - calculations were based on the grades of those students who passed - were essentially the same regardless of location. The only exception being CS 271 where the off-campus group which numbered 13 students were able to achieve a class average 2.64 points higher than the 3 students enrolled on-campus.

TABLE 4

Class Averages By Locations
Television Project
December, 1984

	ADMIN 250	CS 270	CS 271	FILM 100
On-Campus	71.57%	76.13%	76.67%	71.5%
Off-Campus	71.79%	77.05%	79.31%	71.52%
* averages only included grades of students who passed the course.				

Although both student and instructor groups were aware of technical problems, both groups displayed positive attitudes towards this type of course offering. On-campus students did not believe they were distracted or inconvenienced by the technology, while off-campus students repeatedly commented on the value and economies which accrue for them when they do not need to travel to Regina or wait until some instructor travels out to their region. Although most did say that they preferred "live" instructors, they were appreciative of the opportunities afforded them. Off-campus students also appreciated the opportunity to retain a video record of their class through the use of a V.C.R.

Instructor attitudes during this project were positive, helpful and understanding. Most responded to the demands of the situation by actively participating in the experimentation.

Experience gained, particularly by Extension, the instructors and A.V. Services was extensive. Extension, through its attempts to advertise, operate and evaluate the system, have gained experience in these aspects. Instructors of these classes have indicated that this semester's experiences have given them new ideas and particularly new ways for

preparing themselves and their lectures for these kind of classes. The most obvious benefits from experience have come to A.V. Services. Tecnnical problems decreased during the semester and the technician's ability to handle technical problems quickly increased during the semester. A.V. Services also indicate the formulation of new ideas and new approaches to this type of class.

INTRODUCTION

This evaluation was concerned with the quality of the delivery system of a group of classes. The delivery system was defined as the support systems, the technical systems, the students, and the system of student/instructor interactions. The evaluation model employed a review of intended and actual antecedents, procedures and outcomes. This section comments upon the project from these perspectives; and from an overall perspective.

SUPPORT SYSTEM

The Faculty of Extension did everything expected of it.

Faculty and departmental support was satisfactory and met instructor expectations.

There is a need to develop a handbook or set of guidelines for those engaged in this form of class delivery. A document would be ideal but it may be sufficient to merely provide an opportunity for some training for instructors. This training may not need to be much more than an opportunity to sit down with other instructors (present and former) to compare notes and experiences. These opportunities are necessary before and during the delivery of the class.

Some increased liaison with the community colleges seems warranted for the Computer Science classes.

TECHNICAL SYSTEM

This system, with one exception, improved after some initial problems were overcome. In fact, the television technicians seemed able to solve each technical problem as it came along; and in the latter stages there were markedly fewer problems. The television system demonstrated that it has the capability to deliver the classes.

The exception, the telephone hook-up, needs considerable attention. Easier access to the campus must be developed. In some centers you could not attend to the lecture and phone in at the same time or from the same room. It was often difficult to alert the professor to the call-in. When contact was made the question was difficult or impossible to hear in other centers. The opportunity to react and communicate with Regina and with other centers through Regina is not presently possible but it needs to be.

The cameramen and the control operator need to make their decisions from an instructional viewpoint. Too often, the camera merely followed the instructor. What is required is for these operators to place themselves in the setting of the viewing students where it is necessary to be stimulated from a visual, an auditory and an interest standpoint.

The doors to the on-campus classroom need to be kept closed. The sound system picked up hallway noises from time to time which interfered with the off-campus reception.

STUDENTS

There must be a class of some size in the off-campus setting. It is apparent that these students need to have company for the long vigil of watching the television set; they need to have someone with whom they can discuss what is coming through the set and they need the support system of classmates.

Some off-campus students indicated a need to be able to have some discussion during the class. Professors also need to understand that there is more going on off-campus than just receiving the 3 - 3 1/2 hours which they put into the television cameras. There is interaction during the presentation to a degree which is not present on campus. There seemed to be some tendency to ignore the off-campus students and groups; this tendency should be limited.

The students achieve at a comparable level. When only the performance levels of the students who complete the classes are compared, it is evident that achievement is almost identical between on and off-campus students. Clearly the delivery system is not having an effect upon achievement, as measured by assignments and tests.

The off-campus students are so appreciative of the opportunity to receive classes that they are very willing to ignore inadequacies which are present in the delivery system.

STUDENT/INSTRUCTOR INTERACTION

It is incorrect to assume that the way a class is presented on-campus will also work well as the way to present it via television. While limited or few interactions may be acceptable when the instructor and the class are in relatively close proximity to each other such limited interaction is not appropriate when two-thirds of the classes are at some remote location. Unless there is considerable interaction between instructor and off-campus students, there is no way to check on the level of communication and understanding. One way is by questioning and discussing it with the students. Another way is with assignments. But to wait for an assignment to be completed, sent to Regina, marked, returned to the sender, then reviewed by the sender is to wait too long for feedback and to check on understanding.

The design and use of instructional aids needs to be of a high quality and an extensive range and compatable with the technology.

The camera limits and focuses the field of vision of the off-campus students. These students cannot place the instructor in a wide field of vision (the classroom) which allows for a variety of visual images. As a result, viewing the image on the television set for long periods of time is

a more demanding and fatiguing experience than viewing the same experience in the on-campus site. Instructors need to assume that levels of interest, attention and fatigue will be different for those off-campus; therefore, breaks and variations in activities must be more frequent than in delivering an on-campus class. And these problems are compounded when it is an evening class and 3 1/2 hours.

INSTRUCTION

Although instruction was explicitly eliminated from this evaluation project, it is necessary to make an obvious comment and identify its implications.

Instruction and instructor characteristics and practices are an essential part of the delivery system of a class; be it on or off-campus, live or on television.

According to the student questionnaire, the off-campus students had high expectations for the approach as an approach. The data provided indicate that expectations that the class would be different from any class taken in the traditional manner diminished as the semester progressed.

Instructors who use a variety of techniques, interact with students, maintain eye contact, effectively utilize instructional aids, give good assignments and return them promptly are perceived to be better instructors than those who do not do these things. The data from the student questionnaires clearly indicated this to be the case in this situation. The more "successful" experiences from the student's point of view were those where the instructor was perceived to be a "good" instructor.

Departments and Extension need to select instructors who have a demonstrated record as good teachers as indicated by students. Then when they are selected, they should have an opportunity to receive advice and training from the A.V. Services personnel in order to use the technology to its maximum potential.

CONCLUSIONS

The methods of class delivery employed in this project resulted in a satisfactory learning experience. The project was successful.

- 114 off-campus students were attracted to the classes and 100 had their needs cared for, thus meeting the objectives of the students, the community colleges, and the University
- the University support system (Faculty, Departments, Extension, A.V. Services) proved that it could do what was expected of it
- instruction and achievement in these classes is satisfactory as measured by standard evaluation procedures
- the Faculty of Extension has demonstrated that it can deliver a very innovative project very successfully and with considerable expertise

There are some aspects of this project which are not as successful as they should be.

- the telephone communication system is too limited in almost all aspects; both in how it can be used and how it is used
- the turn-around time for assignments and the resultant feedback is much too slow
- using standard lecture procedures do not effectively utilize the potential of the instructional media of this project
- the appropriateness of the transmission of some instructional material needs to be improved, e.g. use of films with sub-titles, use of overhead projection, chalkboard material

The following are considered to be the most important changes which should be made if the project is repeated.

- the telephone communication system must be improved to allow a more immediate response by the instructor, to allow students to phone from the classroom site, and to allow discussion to take place between centers

- Professors should take time with the students, either before the class begins or at the first class meeting, to explain the system and the limitations of the technical equipment
- Profesors should meet the off-campus students before the first class is transmitted
- some attention should be devoted to making improvements, in the turnaround time of assignments, i.e. making the interval as short as possible - certainly shorter than the interval between assignments.
- ensure necessary materials, resources and equipment is available to the off-campus students during the semester (i.e. computer terminals)
- a method needs to be instituted which would allow instructors (former and current instructors) to share ideas and experiences with respect to the delivery system
- there needs to be early identification of instructors so that those who are new to this type of teaching have adequate time and information for planning for and utliizing this unique delivery system

APPENDIX A

"The Evaluation Model"

STAKE'S COUNTENANCE MODEL*

Background

Stake sees man's activities as being complex and any measurement of man's activities must take this into account. Therefore, Stake's model is wide-ranging and holistic. He has designed it so that it provides a means for collecting and analysing as much data as is feasible.

After Scriven's contribution to the theory of evaluation and the number of innovative programs of the 60's, there was a need for explicit procedures or frameworks to carry out valid evaluation. Stake's model was created in response to this need. In addition, Stake's model can employ many theoretical constructs (i.e. objectives, goal-free, criterion-referenced, etc.) and can include a wide range of evaluation instruments.

The Model

Stake sees evaluation as being either formal or informal--informal being highly subjective and casual while formal evaluation is dependent upon empirical measurement (i.e. structural visits, standardized testing, etc.). Although Stake sees a place for informal evaluation (i.e. preliminary needs assessment, qualitative evaluation, etc.), his model concentrates on formal evaluation. In this light, he defines the two essential acts of evaluation as being description and judgment (Stake, 1976). According to Stake, a complete evaluation will "fully describe and

* Stake, Robert E. "The Countenance of Educational Evaluation" Teachers College Record, LXVIII (1967), 523-40

fully judge" (Stake, 1976). Using this concept, Stake divides evaluation data into two dimensions. One dimension separates data into descriptions and judgments; the other classes data into antecedent, transaction and outcome[1] (Mackay, 1971). These two dimensions make up the data matrices. As can be seen from Figure I, the description matrix is sub-divided into intents and observations and the judgment division is subdivided into standards and judgments. Intents are those goals or objectives that were intended and observations are what was observed. Evaluation then becomes a matter of finding logical relationships along these two dimensions (see Figure II)[2] and deciding the degree to which these relationships exist.

Role of the Evaluator

Under Stake's model the evaluator has been given the responsibility of making judgments. To do this, the evaluator relates his observations to a set(s) of standards and decides whether or not the standards have been met. These comparisons can take the form of "absolute comparison", in which comparison is made to standards set out by national institutions, experts or other reference groups and/or of "relative comparison" in which comparison is made to similar or alternate programs. On the basis of these comparisons, the evaluator then makes judgments and recommendations. (See Figure III).

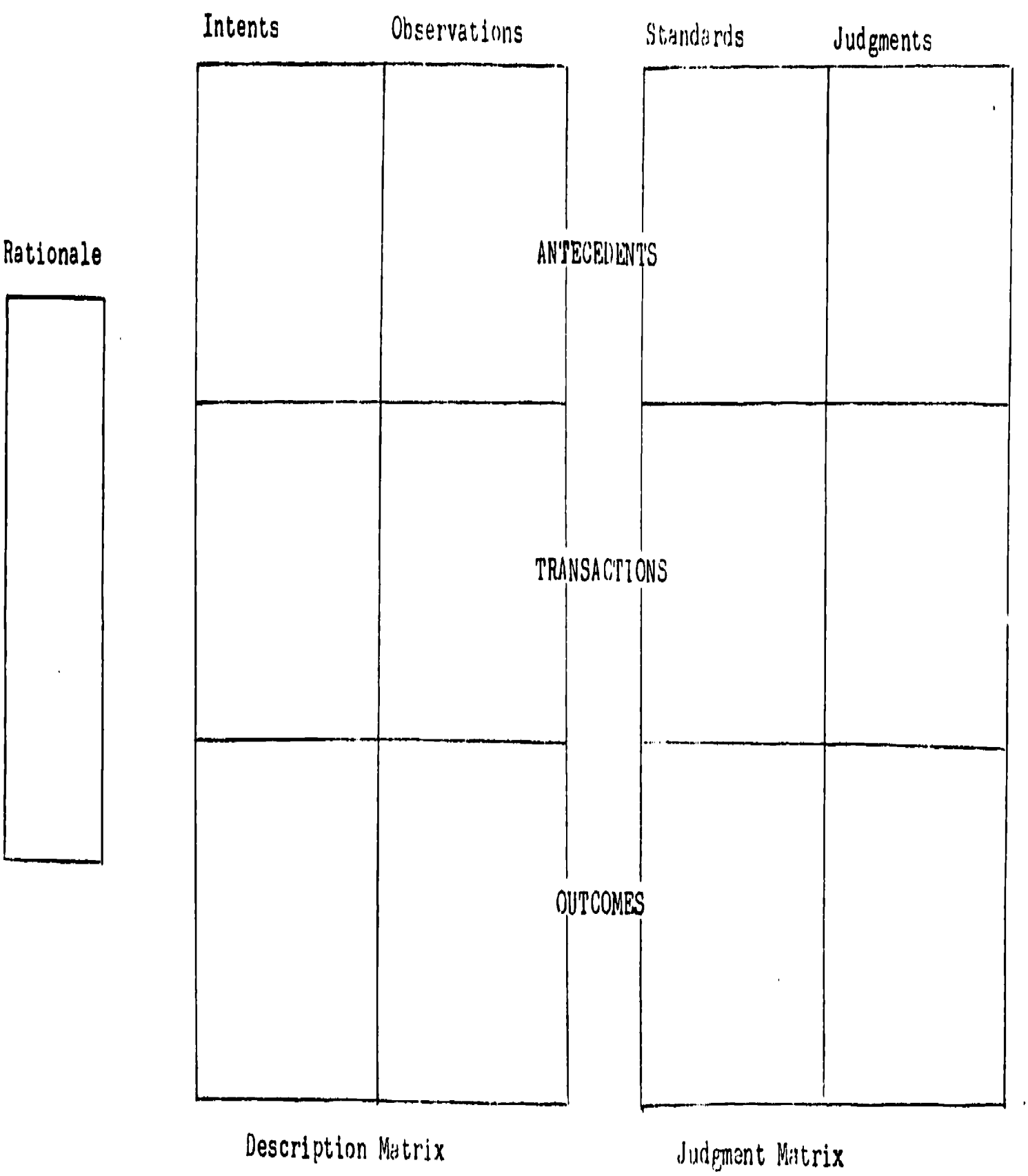
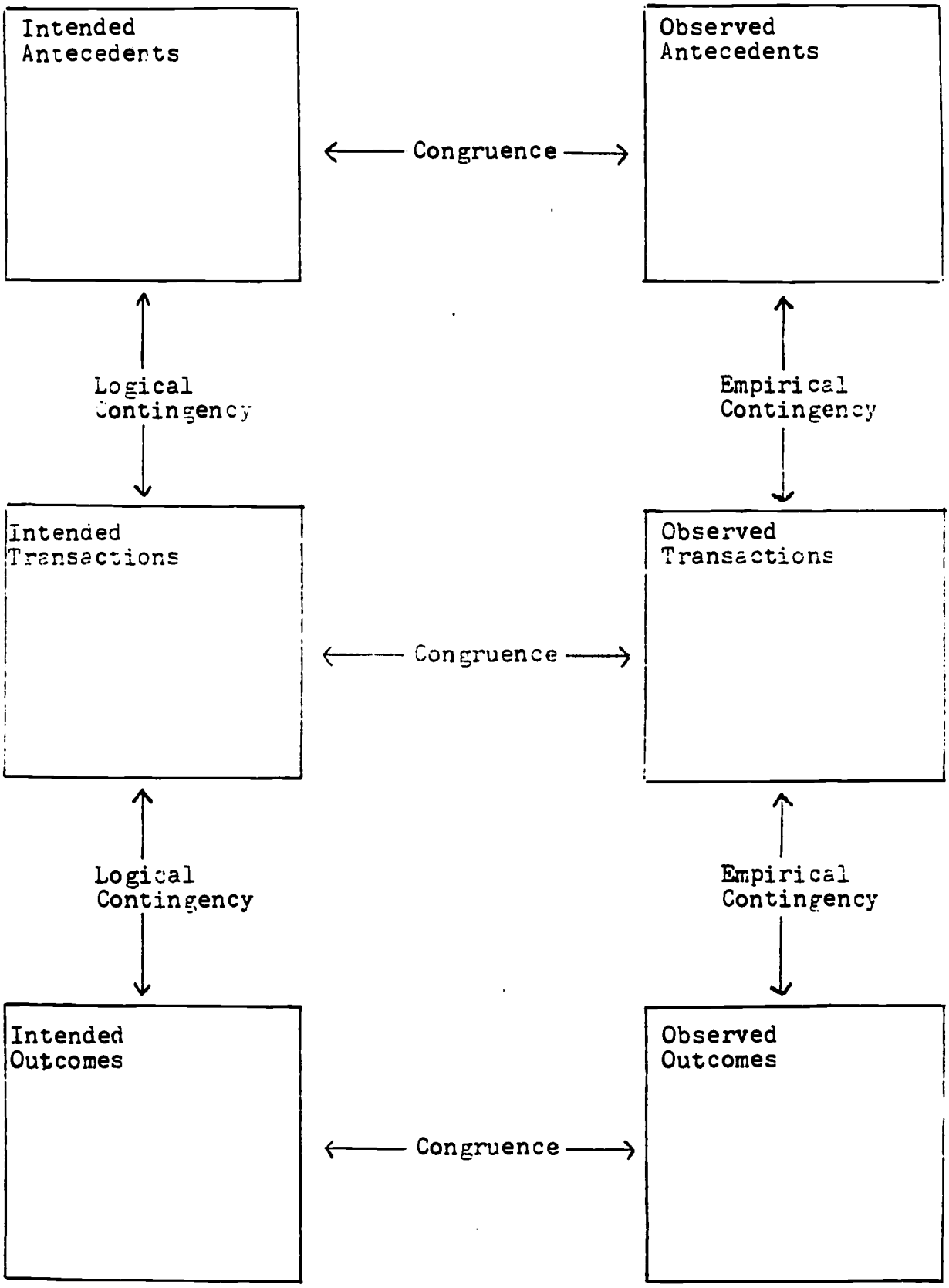


Figure I: A Layout of Statements and Data to be Collected by the Evaluator of an Educational Program

Source: Worthen and Sanders, 1973, p. 113.

Figure II: A Representation of the Processing of Descriptive Data



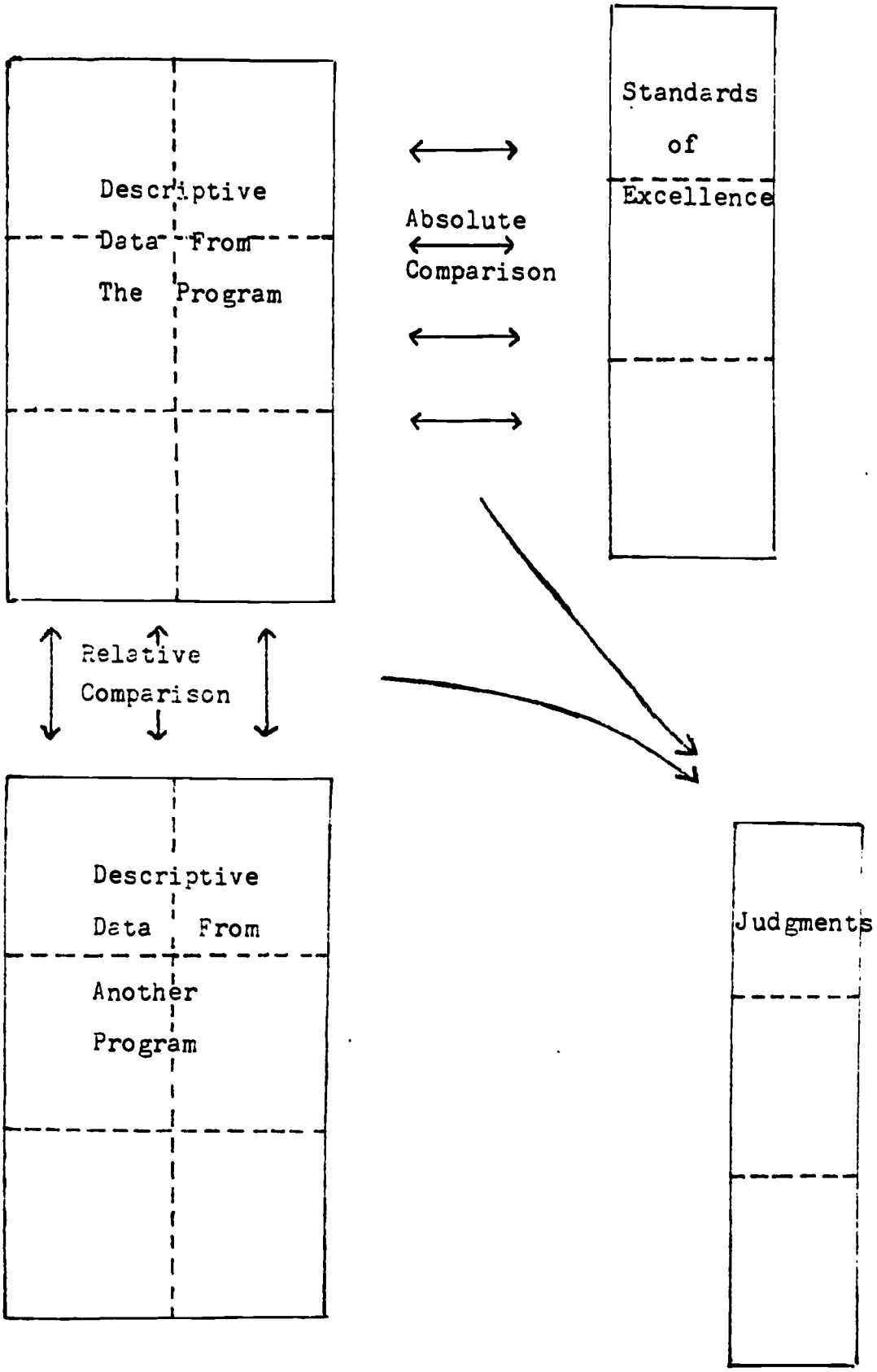


Figure III: A Representation of the Process of Judging the Merit of an Educational Program.

Source: Adapted from Worthen and Sanders, 1973, p. 121.

Strengths

The strengths or contributions of the countenance model can be listed as follows:

1. The model provides a framework which allows for evaluation and judgment at the beginning, during and at the end of the program. Stake sees this framework as a means to "stimulate not subdivide" (Worthen, 1973, p. 112). That is, it forces the evaluator to evaluate in ways that might be over looked.

2. The model calls for a broad base for data collection. The descriptive measures include as many data collection procedures as possible. Recall that Stake bases his model on a holistic approach and feels that, as much as possible, the program should be described as fully as possible. This type of approach will:
   a) be unlikely to miss important events
   (b) allow for other systems of evaluation to be used (i.e. Scriven's goal-free evaluation, objective evaluation, etc.).

3. The model allows for evaluation of innovative programs through relative comparison.[3] Stake feels that if standards do not exist then they must be estimated. These standards should be determined prior to evaluation.

4. The countenance model can be used for both formative and summative evaluation.

5. Stake stresses the importance of a variety of skills such as a team approach rather than a single evaluator. He sees a place in the evaluation process for not only measurement specialists but also social scientists, psychologists, etc.

6. Attention should be given to what the client actually wants prior to designing the actual evaluation. This includes identifying the audiences that will likely be involved and including their needs in the data gathering and reporting.

7. The model is sensitive to local needs. As mentioned above, standards can be selected that are relevant to the program and to the conditions in which it must operate. As well, it can be modified to provide useful information to those concerned.

8. Because Stake does not expect complete congruency between intents and observations he allows for unintended outcomes to be included and evaluated.

Weaknesses

The limitations of Stake's model can be listed as follows:

1. The model relies heavily on the observational abilities of the evaluator. If the evaluator is not well-trained, he/she may miss important details or events. This can undermine the underlying philosophy of the model.

2. Because the model calls for more than one set of standards on which to judge the program, this could result in conflicting evaluations of worth. That is, there may be disagreement between participants and experts regarding the worth of the program. This may have an impact on the final evaluation.

3. A problem may arise when the evaluator(s) has (have) a limited budget and/or limited time. This may force evaluators to be selective in their observations and important relationships may be missed or not fully investigated because of it.

4. Some critics feel the model is too unstructured and it is difficult to apply the matricies. They feel there is a certain overlap in boundaries and in the concepts of contingency and congruency.

5. It may be difficult, if not impossible, to obtain specific intents for each stage of the evaluation. Even though Stake does not insist upon a statement of goals and objectives in behaviouralistic terms, it may still be difficult to obtain valid intents.

6. Because such a wide collection "net" is thrown, a very large amount of data may be collected. This may make the resulting analysis a Herculian task. This could limit the degree to which contingencies and congruencies are determined and examined.

7. As mentioned above, the evaluator has considerable latitude in the collection and judgment of data. This may result in evaluator bias through the determination of instruments and procedures used, standards selected and judgments derived.

8. The team approach can be expensive and difficult to administer. This limitation may effect the quality of the observations gathered or the evaluations made.

NOTES

[1]Antecedent data are observations and judgments collected on conditions prior to the program. Transaction data are collected while the program is carried out and outcomes are data collected after the program is completed.

[2]Stake classifies these "relationships" into contingencies and congruencies. For example, if we were to look at the observational column, the evaluator would determine if there was logical contingency between what he observed as being intended and what he observed as transpiring. In another column, he would look for logical contingency between the expressed intents of a transaction and the expressed intents of the outcomes of the program.

Proceeding horizontally, the evaluator would look for congruencies between what was intended and what transpired. Stake feels that not only is it unlikely that complete congruence will occur, but also, it is not all together desirable to have complete congruency. The reader is referred to Worthen and Sanders (1973) for a complete description of Stake's Countenance Model.

[3]Ibid.

REFERENCES

MacKay, D. and Maguire, T.; Evaluation of Instructional Programs; Alberta Human Resources Research Council; 1971.

Worthen B. and Sanders, J.; "The Countenance of Educational Evaluation;" Educational Evaluation: Theory and Practice; Belmont, Cal.; 1973.

APPENDIX B

"Instructor Intended Antecedents, Procedures, Outcomes, Questionnaire"

- As difficult as we know it will be to do so, please complete this form from the point of view of what you felt were <u>your intentions</u> <u>prior to the commencement of the class</u>.

- We will call for the completed form within two days.

- Please call one of us if you wish to enquire about any part of the form - Cyril - 4623 Orrison - 4539

ANTECEDENT CONDITIONS

	UNSAT-ISFACTORY			SATIS-FACTORY	NOT SURE/ NOT AN ISSUE
	1	2	3	4	5	____

1. From your point of view, how would you rate the pre-planning of/or for your class

by the Extension Department?	1	2	3	4	5	____
by AV Services?	1	2	3	4	5	____
by your Department Head/ and/or Dean?	1	2	3	4	5	____

Comments or additional information _____

_____

_____

2. Rate the availability of <u>prior</u> information about the delivery of off-campus classes by electronic or telephonic means.

1 2 3 4 5 ____

Comments, etc. _____

_____

_____

3. Rate the quality of the support system (Departmental, clerical, library, colleagues, etc.) available to you for <u>planning</u> your class.

1 2 3 4 5 ____

Comments, etc. _____

_____

_____

4. Rate the quality/availability of the resources and support system available to you to assist in making <u>instructional</u> decisions concerning the class.

1 2 3 4 5 ____

Comments, etc. _____

_____

5. Rate the extent to which you feel you were able to play a part with respect to determining the timetabling or scheduling of the class.

1 2 3 4 5 ____

Comments, etc. _____

_____

_____

6. Rate the availability of instructional materials during your planning period.

1 2 3 4 5 ____

Comments, etc. _____

_____

_____

7. Rate the amount of time you had in which to do your planning.

1 2 3 4 5 ____

Comments, etc. _____

_____

_____

8. Rate the quality/extent of technical support, assistance, advice, etc. which you received from AV Services during your planning period.

1 2 3 4 5 ____

Comments, etc. _____

_____

_____

9. List what you feel are the desirable/appropriate characteristics for the instructor of the class (education and experience(s)).

_____

_____

_____

_____

_____

10. Before you met the students, you likely had some opinion about what they would be like. List what characteristics you felt would be present in, or represented by, the students.

11. And what did you think would be the expectations of the students?

12. When you were getting ready for the class, what did you feel would be appropriate or necessary or desirable - knowledge or prerequisites which the students would possess?

13. If you planned to meet with the students before the commencement of the class, how did you plan to contact them?

What did you feel would be the primary objectives of the meeting?

* How did you plan to organize and conduct the session?

14. How many lessons/sessions did you intend to have planned before the class met for the first time? _____

Comments _____

_____

15. What did you expect would be the nature of the on-campus setting? Describe it please.

_____

_____

_____

_____

The nature of the off-campus setting?

_____

_____

_____

_____

16. In your intended plans, how did you plan to evaluate? (What evaluation activities - assignments, tests, other means), what value for each one, how often, when, etc.).

_____

_____

_____

_____

_____

17. Describe simply, but in some detail, what you expected would be the <u>typical</u> structure of a lesson/session. Normally, what would you intend to do? For how long? For what purpose(s)? What would you expect the students to do? How would they participate? Etc.

_____

_____

_____

_____

_____

_____

18. In what ways did you think the technical equipment might affect, particularly the delivery of the class - positively and/or negatively?

on-campus _____

_____

_____

_____

off-campus _____

_____

_____

_____

19. How did you intend to compensate for the negative effects?

on-campus _____

_____

_____

off-campus _____

_____

_____

20. With a check mark, indicate the extent to which you expected your Department/Faculty or Extension would assist you during the semester with respect to:

	Considerable	Minimal
instructional planning	_____	
delivery of the class	_____	

21. Indicate the extent to which you expected on-going assistance from AV Services.

Considerable	Minimal
_____	

22. How did you anticipate that you would deal with equipment breakdown or malfunction - totally or partially?

_____

_____

_____

_____

_____

23. What were your plans in the event of your absence (planned)? _____

_____

_____

your absence (unexpected) _____

_____

_____

student absences _____

_____

_____

24. Did you have a specific plan which you were going to follow in order to determine what the needs of the students were? Yes _____ No _____
If yes, describe the plan.

_____

_____

_____

25. Indicate the degree or extent to which you felt the students would interact.

	to a considerable degree	to a minimum degree	hadn't thought of this
with you?	_____	_____	_____
with each other?	_____	_____	_____

26. What feedback techniques (e.g. questions, surveys, discussions, informal conversations, etc.) did you intend to employ during individual lessons?

_____

_____

_____

at the mid-point or end of the class? _____

_____

_____

27. How did you intend to have the off-campus assignments delivered? _____

_____

returned? _____

_____

28. How did you intend to deal with take up or discuss assignments for the on-campus students?

_____

_____

the off-campus students? _____

_____

INTENDED OUTCOMES

29. Before the class commenced, what were the objectives you had for the class?

_____

_____

_____

30. What objectives did you have for the assignments? _____

_____

_____

for the tests? _____

_____

_____

31. When the class began, what did you feel would be appropriate objectives/expectations for the students to have with respect to the class?

_____

_____

_____

_____

32. If you distributed a class outline, tentative schedule, etc. at the first class, please attach it.

APPENDIX C

"Instructor Post Semester Questionnaire"

1. From your point of view how would you rate the support of your class?

	unsatisfactory			satisfactory		not sure/ not an issue
by Extension	1	2	3	4	5	_____

Comment: _____

_____

_____

by AV Services	1	2	3	4	5	_____

Comment: _____

_____

_____

by your Dept.Head/Dean	1	2	3	4	5	_____

Comment: _____

_____

_____

Support system (dept., Clerical, library, colleagues,etc.)	1	2	3	4	5	_____

Comment: _____

_____

_____

2. Was the information available prior to the class about this type of class valuable to you during the class? Yes ____ No ____

Comment: _____

_____

_____

3. Woud you want to be more involved in the timetabling or scheduling of these kinds of classes, if you were to teach one again? Yes ____ No ____

Comment: _____

_____

_____

4. What kind of additional instructional materials would you suggest be needed/used if you were to teach this class again?

_____

_____

5. Comment on planning time required, ie what was the planning time necessary and was this more or less than a normal on-campus class?

6. How could AV services improve their support of these classes?

7. List what you now feel are the desirable/appropriate characteristics for the Instructor of this class.

8. In general, what were the students like?

   on-campus? _____

   off-campus? _____

9. What kind of contact should there be between the Instructor and the students before, during & after the class?

10. How should this contact be organized and for what purpose?

11. Should the students in these classes be evaluated in a different manner than regular on-campus classes? Yes ____ No ____

    Comment: _____

12. What was the most common occurrances which required a change in your instructional plans?

Describe: _____

_____

_____

13. Did you compensate for any of the potential negative effects of the technology used in these classes?

Comment: _____

_____

_____

14. Comment on any different (appropriate to this setting) instructional activities which could be used in this class?

_____

_____

_____

15. Comment on any aspect of the class which you feel needs attention by another instructor attempting to teach a class under similar circumstances.

_____

_____

_____

_____

APPENDIX D

"Reporting Form Indicating Activities of Previous Class and Intentions for Next Class and Analysis of Data from Forms"

Please answer the questions in this column by considering
LAST WEEK'S SESSION
(i.e. the one you just taught).

1. Content Outline - Please describe or attach an outline of the content you did teach in the last session.

2. Please describe how this content was delivered, i.e. lecture, question and answer, group work, etc.

3. Please describe how the students participated in the session, i.e. extensive discussion, questions, etc.

on-campus

off-campus

Please answer the questions in this column by considering
THIS WEEK'S SESSION
(i.e. the one you are about to teach).

1. Content Outline - Please describe or attach an outline of the content you intend to teach in the next session.

2. Please describe how you intend to deliver this content.

3. Please describe how you anticipate the student's participation in the session.

on-campus

off-campus

4. Were there any out-of-class activities this week? If so, describe them.

student activities _____

_____

_____

_____

professor's activities _____

_____

_____

_____

4. Do you plan any out of class activities this week? If so, describe them.

student activities _____

_____

_____

_____

professor's activities _____

_____

_____

_____

5. Please fill in the number of students in atterdance.

on-campus _____

Moose Jaw _____

Swift Current _____

Melville _____

Yorkton _____

6. Were there any technical problems? If so, describe them and how they were dealt with.

_____

_____

_____

_____

_____

7. Additional comments.

ANALYSIS OF DATA FROM FORMS *

Background

Participants in the study were:

Name	Subject Taught	On-Campus Phone
Ross Purse	Comp Sci N271	4800
Bill Chadwick	Admin N250	4989
Terry Marner	Film N100	9861
Gordon Hunter	Comp Sci N270	4643

Procedure

Gordon Hunter's forms were picked up at his office Fridays between 10:30 and 12:00.

Terry Marner's forms were picked up at the audio-visual main office on Fridays between 10:30 and 11:00.

Bill Chadwick's forms were delivered to me by Dr. Keston (the times varied).

Ross Purse's forms were mailed to Dr. Keston through inter-office mail. Dr. Keston then delivered them to me.

Analysis [See attached question blank (Appendix 1) for the content of each question]

Comparison week-to-week of each participant's forms.

Questions 1 - 3
[See Table 1 (Appendix 2) for summary]

Comments

Chadwick's week-to-week work is highly consistent. His use of weekly outlines, which appear to have been prepared well in advance, appears to have limited the degree of week-to-week variation. Chadwick's outlines are attached to each form.

* Denny Quigley, a graduate student, prepared this analysis.

Marner. Intended content and mode of delivery and the reported activities were very nearly identical. Marner experienced some difficulty with question and answer work--out-of-town people appeared to inhibit class people.

Hunter. November 5 form never returned so October 29 - November 5 and November 5 - November 12 comparisons were impossible. Hunter's responses were typically limited to one word and the forms appeared to be hastily completed. Analysis is, therefore, difficult and tentative. Intents and activities appear to be congruent.

Purse. Only two forms were received from Purse. For these two weeks (October 29, November 5) intents and actions were similar.

Question 4

Comments

Chadwick. The comments made in the analysis of Questions 1 to 3 apply to Question 4. There is a high degree of correlation between reported intent and reported activities.

Marner. Week-to-week work very similar. Some provision was made for extreme weather conditions. (Make-up tapes provided for out-of-town students who were unable to view the class.)

Hunter's limited responses made analysis extremely difficult. Typically there were no out-of-class activities reported, or activities were limited to lecture presentation.

Purse. Prepared lectures and marked assignments.

Question 5
(See Appendix 3 for summary of attendance)

Analysis of Attendance

(1) It is difficult to do any meaningful statistical analysis because the possibility exists that off-campus students

may attend on-campus classes and vice-versa. This possibility was not anticipated and, hence, not reported.

(2) Subjectively, it would appear that off-campus attendance is slightly higher than on-campus attendance. It should be noted that attendance overall was better than 90%.

Question 6
(See Appendix 4 for week-to-week summary of technical problems)

Question 7

The comments made can be summarized as follows:

Chadwick. On November 19 Chadwick noted that two out-of-twon students attended a lecture on-campus. These students expressed the opinion that the live class was better than the video hook-up but that the video hook-up was to be preferred over 'teleconferencing'.

Marner. Oct. 29. Television screens in the off-campus homes cut-off the sub-titles of the films viewed. Marner felt that this would have to be taken into account in future offerings.

Nov. 5. Discovered class was being broadcast by Yorkton cable. Thought this might conflict with faculty associate contract--i.e. copyrights.

Nov. 12. Still having difficulty with sub-titles. Apparently sub-titles can be read on the in-class monitors but not on out-of-town televisions.

Nov. 19. Severe weather conditions on successive classdays (Wednesdays) made it difficult for some out-of-town students to drive to the appropriate locations.

Hunter. No additional comments.

Purse. No additional comments.

Group comparisons, observations and conclusions.

(1) It appears that, as a group, the content that was intended was actually taught in the manner that was intended.

(2) There appears to be little adjustment over time in the methods of delivery as a result of off-campus students. (It should be noted that only the last half of the semester was analysed. Hence, adjustments may have been made previous to the reporting period.)

(3) The "tone" of reporting and general attitude towards the forms and evaluation appeared to be positive.

(4) The attitude towards the televised mode of instruction appeared to be positive to neutral. The presence of television cameras and telephone hook-ups did not appear to significantly alter the instruction of the course from what would have been done under a more typical classroom setting.

(5) The responses ranged from one-word responses (in the case of Hunter) to nearly duplicate responses (in the case of Chadwick) to highly explanatory responses (in the case of Marner).

(6) With the exception of Marner, and Chadwick on one occasion, there were no additional comments provided.

(7) With the exception of Marner, there were minimal technical problems reported. I suspect Marner's expertise in this area made him somewhat more cognizant of technical problems. In addition, the nature of the subject taught ("The Art of Motion Pictures") required a higher degree of technical support than did the other classes.

(8) The only reported activities of the professors outside the classroom, with the exception of Marner's one visit to Yorkton, were those of marking and lecture preparation.

(9) The only reported activity of the students outside the classroom was a single visit to Chadwick's on-campus class by students from Moose Jaw.

APPENDIX 2

SUMMARY OF QUESTIONS 1 - 3 RESPONSES

Comparison Week-to-week	Chadwick	Marner	Hunter	Purse
Oct. 29-Nov. 5	Complete Congruence	Question and answer limited due to visiting lecturer	Nov. 5 form not received	Congruent
Nov. 5-Nov. 12	Intended to use case study, not reported as being used	In-class question and answer restricted because of time delay of off-campus students	Nov. 5 form not received	Nov. 12 form not received
Nov. 12-Nov. 19	Complete Congruence	Congruent correctly anticipated lack of question/answer time due to test	Congruent	Nov. 19 form not received
Nov. 19-Nov. 26	Used some question and answer after mid-term	Large variation in content because of substitute instructor	Congruent	Nov. 26 form not received
Nov. 26-Dec. 3	Congruent	Congruent	Congruent	Dec. 3 form not received

APPENDIX 3

SUMMARY OF STUDENT ATTENDANCE

Attendance	Chadwick			Marner				Hunter					Purse			
	On-Camp	MJ	SC	On-Camp	MJ	SC	York	On-Camp	MJ	SC	Mel	York	On-Camp	MJ	SC	York
Oct. 29	24	9	6	13	7	8	3	9	8	14	8	9	3	4	6	6
Nov. 5	21	8	4	12	9	13	3	--	--	--	--	--	3	4	5	6
Nov. 12	21	9	6	12	9	13	3	8	8	15	8	9				
Nov. 19	22 York = 1	8	6	13	7	12	3	Not completed---------					----No Forms Received After November 5--			
Nov. 26	23 York = 1	8	6	13	7	12	3	9	8	14	8	9				
Dec. 3	18 York = 1	6	7	13	7	12	3	8	8	13	7	8				

KEY:

Moose Jaw -- MJ
Swift Current -- SC
Yorkton -- York
Melville -- Mel
On-Campus -- On-Camp

APPENDIX 4

SUMMARY OF TECHNICAL PROBLEMS

	Chadwick	Marner	Hunter	Purse
Oct. 29	Lost contact with Swift Current for 20 min. Delayed test completion 20 minutes.	Sub-titles not matching	None	None
Nov. 5	None	Sub-title Problems	None	None
Nov. 12	None	Sub-title Problems	None	No Forms Received After Nov. 5.
Nov. 19	None	Problem with low volume levels on speakers (telephone hook-up?)	None	
Nov. 26	None	None	Melville lost video for most of the class. Hunter re-viewed important points of the class once video restored	
Dec. 3	None	Trouble with sound levels of the mikes and balance of black and white on monitor	None	

APPENDIX E

"End of Semester Student Questionnaire"

STUDENT QUESTIONNAIRE

1. How did you find out about this class? _____

2. How do you think these type of classes should be advertised? _____

3. What were your personal objectives/expectations for the class? _____

4. What do you believe to be the benefits of a class transmitted by television? _____

the disadvantages? _____

5. In what ways did you think the technical equipment effected the delivery of the class - positively and/or negatively? _____

6. What did you expect the professor/Extension Department to do before the class began to prepare you for a class delivered by television? _____

7. What did the professor/Extension Department do before the class began to prepare you for this class? _____

8. Did you feel well prepared to take this class? Why? _____

9. How many times were you able to speak face to face (in person) to your professor during the entire class? _____

10. What do you think should be the minimum number of personal contacts between you and the professor during the whole of the class?

CONTACTS 0 1 2 3 4 More than 4

Comments _____

_____

_____

11. Did the instructor teach the class in the manner you expected? _____

_____

_____

12. In an instructional sense, how should the professor use the technology, i.e. TV, telephone, etc., in teaching the class? _____

_____

_____

13. Rate the difficulty in receiving assistance, advice and/or further information because of the use of the television and the telephone?

Not too difficult Very difficult

1 2 3 4

14. What characteristics would you expect of a professor who was successful in teaching through the use of TV? _____

_____

_____

15. Was viewing the professor on TV and using the telephone to communicate during the lectures difficult? Why? _____

_____

_____

_____

16. How did you receive texts and other materials? _____

_____

_____

17. How did you submit your tests and assignments? _____

_____

_____

18. How did you receive feedback on your tests and assignments? _____

_____

_____

_____

19. Based on your experience in a class like this, how should you:

receive texts and other materials? _____

_____

submit tests and assignments? _____

_____

receive feedback on your tests and assignments? _____

_____

20. Rate the level of difficulty in accessing materials/resources necessary to complete assignments.

Not too difficult			Very difficult
1	2	3	4

Comments _____

_____

_____

21. Indicate the extent to which you, during the lecturers, interacted with the

	A lot			Not much
Professor	1	2	3	4
Other students	1	2	3	4

Comments _____

_____

_____

22. If you were absent from a lecture, how did you catch up? _____

_____

_____

_____

23. How were you evaluated? _____

_____

_____

24. Please check one of the following:

I am an on-campus student _____

I am an off-campus student _____

25. I was enrolled in (check one)

Administration 250 _____

Computer Science 270 _____

Computer Science 271 _____

Film 100 _____

26. I attended class in _____

27. Any other comments or information _____

_____

_____

APPENDIX F

"Class Outlines for Film 100, Administration 250, Computer Science 270 and Computer Science 271"

1. Class will meet Wednesday 7:00 p.m. - 10:20 p.m.

2. Text: UNDERSTANDING MOVIES by Giannetti, 3rd edition

   This text must be read and digested

3. Assessment:

   a) Three short answer tests which will cover the text and material shown in class.

      Each test will be worth 20% of the total work.

   b) One formal final short answer test will be given at the end of the course.

      40% of the total work.

   N.B. The percentage grading system will be used.

4. Attendance:

   Attendance is required at all classes.

5. Instructor: T. D. J. Marner

   Office: Campion 500

   Telephone: 584-4569

   569-9861 (residence) FOR OFF-CAMPUS STUDENTS ONLY

   Office Hours: 11:00 a.m. - 12:00 noon Monday to Thursday

   OR

   by appointment

   Appointments: Contact Mrs. Teece at 584-4796

COURSE OUTLINE

September	12	The Great Primitives
		The Cabinet of Dr. Caligari
	19	Cabiria
		Odessa Steps
	26	8½
		Test Chapters 1 - 2
October	3	Citizen Kane
	10	Hiroshima Mon Amour
	17	Nanook of the North
		Night Mail
		If You Love This Plant
		Night and Fog
		Test Chapters 3, 4, 5
	24	Avant-garde films
	31	Jules et Jim
November	7	Saturday Night and Sunday Morning
		Test Chapters 6, 7, 8
	14	World of Apu
	21	Top Hat
	28	Maltese Falcon
December	8	Red River
Date to be announced		FINAL TEST Chapters 9, 10, 11

UNIVERSITY OF REGINA
FACULTY OF ADMINISTRATION
ADMINISTRATION N250C
Personnel Administration and Industrial Relations

Instructor: W.F. Chadwick
Office: Ed. 4.38
Phone: 584-4989 (office)
585-0933 (home)

1984 Fall
7:00-10:30 T

TEXT:

K.M. Srinivas (ed.), Human Resource Management: Contemporary Issues in Canada, McGraw-Hill Ryerson, 1984.

COURSE PERSPECTIVE AND OBJECTIVES:

Human resources management comprises all of the actions and decisions of managers which affect the acquisition, development, motivation and retention of an organization's human resources. An organization's real or de facto human resources policies are those that are communicated by the words and actions of all managers when they interact with those they manage. Thus all managers, whether they are aware of it or not, perform the human resource management function.[1] In doing this they must be aware of sound personnel administration practices aimed at the fair and productive utilization of human resources. Not only is this the key to each manager's successful job performance, but it is also essential for the greater benefit of the individual, the organization and society. With this perspective in mind, the objectives of this course will be:

1. to investigate the different functions of Personnel Administration as a basis for further study

2. to give you insight into the need for sound human resource management as both a line and staff responsibility in an organization and

3. to initiate your skill development in analyzing various personnel situations, identifying problems and weighing the merits of alternative solutions.

TEACHING METHODS:

A video conference technique is being initiated on an experimental basis. Through this technique groups of students located in Moose Jaw, Swift Current, Yorkton and Melville will see, hear and participate concurrently in classroom sessions taking place in Regina. Each location will be in contact with other locations by means of a conference telephone system. Specific teaching methods will include:

Lectures - to emphasize key subjects in each session

Cases - one or two cases will be assigned in each session. Students wll be divided into syndicates of approximately five persons each prior to meeting with the total group. A resource person will be available in each location to assist students in analyzing case content and presenting results.

Tests and Feedback - there will be two one-hour tests during the term

Term Paper - each student will be required to prepare a written assignment of 3000 words on some particular subject of interest (see addendum for some suggested topics). Separate format guidelines will be provided later in class. Term papers will be due no later than November 27th, 1984.

CLASS STRUCTURE:

Hrs.: 1900 — 2230

Intro. Overview and Objectives	Lecture with Questions/ Discussion	Case Study: Syndicates	Case Study: Total Group	Lecture with Questions/ Discussion	Summary

The initial 75 minues will consist of a lecture by the instructor with time for questions and discussion to ensure that the essential concepts in each chapter are understood.

The next 80 minutes will concentrate on a case study assigned in the previous week. However, there will be no case assignments in the weeks when mid-term tests occur.

In the final 55 minutes, we will return to the lecture format allowing sufficient time for class discussion and a summary of all material covered during the evening. Two breaks of approximately ten minutes each will be provided at appropriate intervals.

COURSE CONTENT AND SCHEDULE:

Set out below are the course content and schedule. You are expected to come to class after reading the material designated for the evening. Not all aspects of a chapter will be covered in class. Occassionally additional readings will be assigned.

Sept. 11		Introduction to Course
	Ch. 1	The Labour Force and the Experience of Work
Sept. 18	Ch. 2	Management of Human Resources and Organizational Productivity
Sept. 25	Ch. 3	Labour Relations Theory and Practice
Oct. 2	Ch. 4	Human Resources Planning
Oct. 9	Ch. 5	Organizational Engagement
	Ch. 6	Employee Development
Oct. 16		**MID-TERM I** - Chapters 1 to 6 inclusive
	Ch. 7	The Superior-Subordinate Interface
Oct. 23	Ch. 8	Discrimination in the Workplace
	Ch. 9	Structuring and Scheduling of Work
Oct. 30	Ch. 10	Reward and Compensation Systems
	Ch. 11	Compensation Policies and Administration
	Ch. 12	Employee Benefits and Services
Nov. 6		**MID-TERM II** - Chapters 7 to 12 inclusive
	Ch. 13	Occupational Health: Psycho-Social Aspects
Nov. 13	Ch. 14	Occupational Health: Material and Chemical Aspects
Nov. 20	Ch. 15	Justice at Work
	Ch. 16	Disengagement from Organizations
Nov. 27	Ch. 17	Future Shock
Dec. 4		Summary and Review
		FINAL EXAMINATION

EVALUATION:

Mid-Term I	15%
Mid-Term II	15%
Term Paper	20%
Final Exam*	50%
	100%

* must obtain passing mark to pass the course

EXPECTATIONS OF STUDENTS:

Simply stated these are as follows:

- complete reading assignments and case preparation prior to attending class- attend classes and be punctual
- participate in group discussions
- don't be pedantic
- be a thoughtful listener
- enjoy the mutual learning experience!

ADDENDUM:

The following may act as "thought-starters" in the choice of a subject for your term paper:

- Evolution of the experience of work
- Organizational goal setting and human resource planning
- Discrimination in the work place: current issues
- Developing a company recruitment program
- Setting up a human resource policy manual
- The appraisal of employee performance and potential
- Keeping the union away
- Strategy for white collar unionism in the 1980s
- Planning integrated compensation and benefit programs in a medium-size company
- Employee attitude surveys: how to plan and implement them
- The terminated employee and relocation counselling
- Hiring and training disadvantaged young people
- Developing and implementing supervisory, management and skills training programs
- Organizing the human resource function in a decentralized (centralized) multi plant (single location) company
- etc.

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1 V.V. Murray, "Organization and Administration of the Human Resources Management Function", Human Resources Management in Canada, Prentice-Hall Canada Inc., 1984.

CS 270 A,B,C and VIDEO
1984 FALL

CLASSES START:	September 6
CLASSES END:	December 6
INSTRUCTORS:	Mr. G. Hunter 270 B,C & Video - CL 223 Mrs. Greenberg 270A - CL 211
TEXT:	Analysis and Design of Information Systems by James A. Senn - McGraw-Hill Publishers

TENTATIVE
MARK DESCRIPTION:

1.	Assignments	30%
2.	Midtern	20%
3.	Final	50%

1. Assignements will be collected in class on the date due.
2. Late assignments will NOT be accepted.
3. Assignments and the midtern will be returned in class only.
4. Attendance will be checked periodically. If your attendance is poor you may be denied the privilege of writing the final exam.

COMPUTER SCIENCE N271

Sections C, M, S and Y

Information Sheet

1. Instructor:

Ross Purse
University Extension
University of Regina
REGINA, Saskatchewan
S4S 0A2
584-4800

2. Mark Distribution:

Assignments			
1 - COBOL	- 5%		
2 - COBOL	- 7%		
3 - COBOL	- 10%		
4 - COBOL	- 13%		
5 - DATATRIEVE	- 5%	Total	40%
Midterm Exam			20%
(7:00 - 9:00 p.m., November 5 - openbook)			
Final Exam			40%
(7:00 - 10:00 p.m., December 17 - openbook)			

3. Lecture Nights:
September 10, 17 & 24
October 1, 15, 22 & 29
November 5, 12, 19 & 26
December 3 & 10

4. Tentative Course Outline:

Week 1
- Introduction
- Files, Records, Fields

Week 2
- COBOL language structure
- IDENTIFICATION DIVISION
- ENVIRONMENT DIVISION
- DATA DIVISION/FILE SECTION

Week 3
- DATA DIVISION/WORKING STORAGE SECTION
- PROCEDURE DIVISION
  - PARAGRAPHS
  - OPEN, CLOSE, READ, WRITE
  - MOVE

Week 4
- ARITHMETIC STATEMENTS & MORE PROCEDURE DIVISION
- DATA DIVISION EDITING

Week 5
- ARRAYS
- SEARCHES

Week 6
- SORTING
- REPORT-WRITER DATA DIVISION

Week 7 - REPORT-WRITER CONTINUED

Week 8 - MIDTERM
- REPORT WRITER

Week 9 - COBOL WRAPUP
(I'm never going to get through everything previous to this in 8 weeks)

Weeks 10 - 12 - DATATRIEVE

Week 13 -REVIEW

5. Sample problem that we will do in class.
(Text P. 73 - question 3)

APPENDIX G

"Report of Observations: On Campus and by Video Tape"

Classes were observed at similar points throughout the semester by the research assistant (M. McCaw)*. In addition, the principal evaluators observed two different classes in order to test and become familiar with the observation instrument, the class delivery procedures and the technical arrangements. An attempt was made to observe classes held throughout a week in order to increase the likelihood of seeing the class at a relatively similar stage of development. However, cancellations due to weather and mid-terms held at different times effected this plan to some degree.

The Film 100 classes held September 19th and October 17th were viewed on videotape, November 7th and 28th were observed on campus. Videotapes were used to view Administration 250 classes held September 18th and October 9th, with the on campus observation made November 27th. Recordings of Computer Science 270 for September 20th, October 18th and November 15th were used, with an on campus observation made November 22nd. Computer Science 271 was seen on videotape using the classes of September 17th and October 15th, while it was observed on campus November 19th.

Observations were concerned with the frequency, duration and nature of the activities when the instructor was engaged in the various aspects of the teaching task; with the student activities of both those on and off campus; with the interruptions which took place either on or off campus; and finally with technical problems which might have originated in any of the settings. The observers were particularly interested in the questions asked as they were the most frequent interruptions or student activities other than those of listening, watching and notetaking. The number and location of the questions was recorded but it is appropriate to note that every question was not necessarily considered as a single question - rephasings, or supplementaries closely related to the first question asked by the original speaker were not counted separately, but included in the time spent on the original question.

* this report was prepared by the project research assistant

Approximately six minutes was the average time spent checking with the remote locations at the start of the class. Questions were also answered at this time.

An average of eleven questions were asked per session, with six being from on campus and five from remote locations. An average of about three minutes was spent on Regina questions and eight and one-half minutes on remote questions. It appeared that all the off campus locations asked about the same number of questions, although at times the locations were not identified by the professor as he took the calls.

It was difficult to determine whether the professor was available for questions during the breaks since these and the films were not recorded in the observed recorded sessions. During the live session the guest lecturer was available and received a call. Unlike the other classes, off campus questions were raised throughout the lectures with the same frequency as on campus interruptions.

Only during the September session did the professor direct questions to the remote locations. These questions led to discussion with the class at the location, and provided the same function as discussion with on campus students. Since the November session had a guest lecturer this may be an unfair observation; however, no questions were direted off campus at the October class.

Audio visual aids were not a problem here. In fact, the cameras were used to illustrate a point under discussion about camera technique in film. This seemed useful and interesting.

Unity was lacking in this class. There was a distinct separation between the Regina students and the remote locations. This was noticeable on the videotapes, but even more in evidence when the class was observed in person. Questions from off campus were received very poorly with mumbled comments and snickers. This was not seen in any of the other classes. The students were younger in Film 100 than the others, which may have contributed to the impatience and intolerance. It was difficult to assess the reaction of the callers to the situation.

FILM 100

SESSION (DATE)**		1 (19/9)	2(17/10)	3(28/11)	Average
Questions from on campus					
	number	4	11	3	6
	minutes	2.75	5.42	0.75	2.97
from off campus					
	number	4	9	3	5.33
	minutes	2.67	14.25	8.50	8.47
total	number	8	20	6	11.33
	minutes	5.42	19.67	9.25	11.45
Questions at breaks*					
	number on	2	1	0	1
	number off	4	0	1	1.67
Time taken to check remotes					
	minutes	10.5	5.5	2.5	6.17

* Breaks include: time at start of class
question breaks
coffee breaks
time at end of class

** One of the principal evaluations also observed this class on campus (Nov. 7, 1985)

An average time of two and one-half minutes was spent at the beginning of each session checking the reception and number of students at the remote locations. This varied from five minutes on an evening when questions were asked to thirty seconds when a signal breakdown occurred. It appeared that some of this checking was carried out before 7:00, which allowed the actual class to begin almost on the hour.

The average number of questions asked on campus was about six per class, with about two per class asked from the remote locations. About seven minutes per class were spent on Regina questions, and almost three minutes on remote questions, predominatly from Moose Jaw. Some of the questions from off campus were the result of a technical problem which resulted in students having an extra twenty-five minutes added to the end of the October 9th class. In the other two sessions a total of only one question was asked by off campus students.

It did not appear that the professor was available to answer questions during the entire breaks, although film coverage was not provided so this is difficult to ascertain. During the session observed live the answers to the midterm exam were written on the board over the break, so no class time was used to this end. Often the break was extended to allow time for group discussion of case studies. The professor stayed after class to answer questions. This time was used mainly by Regina students. Few interruptions for questions occurred during any session.

Case studies provided input from all locations and often resulted in discussions between students in remote locations and students in the Regina classroom. An average of about four questions per session were directed to the remotes, with the number increasing in the last observed session. A

similar amount of time was spent on discussion of the case studies regardless of whether the contribution was being made from on or off campus. An attempt was made by the professor to have each group represented by a different spokesperson each week.

Little problem was experienced with audio visual aids, although a caller complained about the overhead projector notes being on camera longer. A conscious effort was made to correct this, and no further complaints were received.

ADMINISTRATION 250

SESSION (DATE)	1 (18/9)	2 (9/10)	3 (27/11)	Average
Questions from on campus				
number	3	4	10	5.67
minutes	2	10	10.58	7.53
from off campus				
number	0	6	1	2.33
minutes	0	6.83	1.83	2.89
total				
number	3	10	11	8
minutes	2	16.83	12.41	10.42
Questions at breaks*				
number on	0	0	5	1.67
number off	0	6	1	2.33
Time taken to check remotes				
minutes	2	0.50	5.17	2.56

* Breaks include: time at start of class
question breaks
coffee breaks
time at end of class

Checking with the remotes took an average of eight and one-half minutes per class. During this time the professor reviewed the previous class, discussed assignments, or answered questions. This included extra minutes spent handling a technical problem off campus. Also, an additional centre increased the time and the number of questions from off campus.

About forty-six questions were asked on an average evening. This comprised thirty-three on campus questions and approximately thirteen off campus questions. The Regina queries took about twenty-seven minutes, while the calls took almost eighteen minutes. Most of the remote questions came from Yorkton, with few from Moose Jaw and Melville.

During the breaks questions were asked by both groups. Even during the question breaks intended for calls, the questions from Regina students predominated. Since they also interrupted the class with questions the breaks did not seem important. Several of the off campus questions were asked at the beginning of the class during the checks, altough there was some increase in their contribution during question breaks as the semester progressed.

In two of the classes questions were directed to the off campus students. As with Administration 250 these tended to be of the case-study-type. In the other two sessions no questions were asked directly to the remotes. However, their opinions and observations were included in midterm and final exam discussions, and in choosing review topics.

Board use appeared to be fine and only on one occasion did a caller complain that the camera moved too quicly to allow note-taking. The problem mentioned in this class was with assignment circulation. It took so

long for the two mailings for each assignment that problems for the next assignment were often created. This lead to difficulty with the professor's discussion of the last assignment since it often was not yet received by the students off campus. Because each paper relied upon knowledge gained from its predecessor, the problem increased as the semester progressed. Perhaps carbon copies kept by the students or use of courier service or bus for transporting assignements would alleviate the situation.

One student tended to dominate the Regina questions. While it may have been necessary for his understanding of the topics, it was time-consuming, and frustrating to watch. His frequent questions interrupted the flow of the lectures, and may have prevented others from coming forth with their questions and observations.

COMPUTER SCIENCE 270

SESSION (DATE)**	1 (20/9)	2 (18/10)	3 (15/11)	4 (22/11)	Average
Questions from on campus					
number	27	41	33	32	33.25
minutes	26.67	22.25	34.83	26.42	27.38
from off campus					
number	6	19	11	15	12.75
minutes	8	35.92	10	17.83	17.94
total					
number	33	60	44	47	46
minutes	34.67	58.17	44.83	43.25	47.55
Questions at breaks*					
number on	9	5	5	9	7
number off	6	8	11	14	9.75
Time taken to check remotes					
minutes	7	6	11.92	9.42	8.50

* Breaks include: time at start of class
question breaks
coffee breaks
time at end of class

** One of the principal evaluators observed this class on campus (Nov. 8, 1985)

In this class an average time of six and one-half minutes was spent at the start of each session checking the number of students and reception in the remote areas. Questions were asked from the remote locations at this time, and from on campus during the wait for the incoming calls.

The average number of questions in total was thirty-eight per class, with about twenty-five coming from on campus and tweleve from the remote areas, predominatly Swift Current. The on campus questions took an average total time of about eleven minutes; the off campus questions totalled an average of eleven minutes per class also. Thus, although half as many calls came from remote locations about the same amount of time was taken to answer them. This may have prevented supplementary questions which arose in the Regina class. While the number of questions in Regina varied per session, with most in the October class, the number of questions tripled from September to November in the remote areas.

The professor was available to answer questions during the breaks and at the end of the class. When the breaks could be observed by having the cameras remain on, or being on campus, it was noticed that this time was used by students in all locations especially by off campus students. Question breaks during the session were used by all. Off campus students were less likely to interrupt the class with questions and appeared to use these times to solve problems.

At the earliest session the professor directed questions to each of the remote areas which were then taken up with the class. However, this decreased until no questions were directed off campus by the last class. The approximate wait for the calls was sixty seconds each, which may have been found to interrupt the class flow. A feeling of unity with all the students was noticed in the class observed live. This was shown by a

Yorkton student being aimably received on campus, and by a Regina student assisting a Swift Current student during the coffee break.

Board use presented a problem since computer language requires a longer area than one-third of the board. This resulted in questions, and notes being rewritten occasionally. Comments were made that the boards and brushes were not cleaned prior to the class, and the chalk supply was often inadequate. These problems made it difficult to distinguish the punctuation on the monitors, and much time was spent trying to clean the boards adequately. Apparently the notes were available on the computer so this may not have been as critical as it appeared while watching the monitor.

COMPUTER SCIENCE 271

SESSION (DATE)	1 (17/9)	2 (15/10)	3 (19/11)	Average
Questions from on campus				
number	17	32	27	25.33
minutes	9.08	11	12.33	10.80
from off campus				
number	6	13	18	12.33
minutes	5.92	11.50	14.92	10.67
total number	23	45	45	37.67
minutes	15	22.5	27.25	21.58
Questions at breaks*				
number on	6	15	6	9
number off	3	13	11	9
Time taken to check remotes				
minutes	6	5.08	8.50	6.53

* Breaks include: time at start of class
question breaks
coffee breaks
time at end of class

Technical problems occurred in nine of thirteen sessions observed. Most of these were very minor, ranging from crackling on the speaker noticed by a professor to colour variation and picture breakup when a particular camera was used. These minor complaints decreased as the semester progressed.

On three occasions the problems were serious. On October 9, in Administration 250 no signal was received in Moose Jaw, Yorkton or Swift Current for the first twenty-five minutes of the class. Regina students were dismissed at 10:00, and the professor repeated the part missed for the remotes. Computer Science 271 on November 19 had Yorkton with neither sound nor picture for the first ten minutes. The sound was restored, but the picture remained "snowy" all evening. To compensate, the professor reread the board material several times since Yorkton could not copy from it. On November 22, Melville experienced both sound and picture problems during Computer Science 270. They started with sound but no picture, then lost sound intermittently throughout the class. Sound was permanently restored at about 9:30, and by 9:45 the picture was on. The Regina class was dismissed just prior to this, and an explanation of the board diagram was given, along with any questions answered. Thus, even these major technical problems did not result in a loss of the entire class for any region. It appeared that every attempt was made to rectify any problem which surfaced. The only situation that caused a cancellation was the October 16 storm. Because off campus students were able to drive to the centres for class on October 17 only Administration 250 was affected.

A different type of sound problem was noticed on the videotapes. At times it was difficult to understand the Regina questions unless the professor repeated them before answering. This was mentioned by one caller. Telephone questions were often difficult to hear, and sometimes

the callers had to speak very loudly to be heard. On two occasions there was feedback on the lines. Noise level was quite high during some classes. It was difficult to distinguish whether it was coming from the camera crew, students at the rear of the classroom, or hallway traffic. It was not only distracting, but sometimes made it difficult to hear the professor. This was noticed in many of the classes.

In most classes fewer questions were directed off campus as the semester progressed. This may be the result of professors being less conscious of the remote students once they become familiar with the particular structure of the class. However, it may have resulted in dividing the two groups and isolating those in remote locations. All professors carried out some discussion with Regina students.

Off campus students seemed hesitant to interrupt the professor to ask questions. This was true in most sessions, although the tendency decreased somewhat during the semester. Professors being available during coffee breaks and at the end of class may aid this. Also question breaks during the evening in which the professsor waits two to three minutes for calls might be effective. This seemed successful in Computer Science 271. In other classes the breaks were short and callers had little time to decide to call before class resumed. During discussion of case studies it is important that the spokesperson for a remote location remain on the line to encourage communication between on and off campus.

It is very important to keep the brushes and boards clean in these classes. The monitor is more difficult to read then the board, and since so many students are dependent on it, every attempt should be made to facilitate this. Chalk dust makes the monitor very blurred and much detail is lost by the end of the evening. It is also important that the board be cleaned well after it is erased during the class.

In summation, many of the flaws in the classes were probably the result of inexperience on everyone's part. As with any new project much can be learned from past mistakes. No problem proved insurmountable, and the flexibility and cooperation exhibited by most of those involved saved the situation on many occasions. This would indicate that from an observer's viewpoint this is a viable, if less than perfect program.

TABLE 2

COMPARISON BETWEEN CLASSES*

CLASSES	CS 271	ADMIN 250	FILM 100	CS 270
Times taken to check remotes				
minutes	6.53	2.56	6.17	8.59
Questions from on campus				
number	25.33	5.67	6	33.25
minutes	10.80	7.53	2.97	27.38
Questions from off campus				
number	12.33	2.33	5.33	12.34
minutes	10.67	2.89	8.47	17.94
Questions asked at breaks				
average total number	18	4	2.67	16.75
Questions directed to remotes				
number	1.33	3.67	0.67	1.75

*Figures used are averages