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ENHANCING LEARNER MOTIVATION
IN AN INSTRUCTOR-FACILITATED LEARNING CONTEXT

by

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It is as though the rationalist is interested in what happens in the best of all possible worlds, while the naturalist is concerned with what happens in the worst (Guba, 1981, p. 79).

DEDICATION

This study is dedicated to

- my father, who served as my earliest example of the great power that is hidden in the combined effect of dedication and perseverance
- Lya, Meira, Muriel, and Yusra, the four women who have motivated me to love humankind
- the people of Mozambique, whose endurance in the face of great suffering has inspired me to engage in the research reported on in this study.

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 - Dr. John Keller, whose creative views on motivation and motivational design have greatly inspired me in developing the strategy under investigation in this study, and whose constructive criticism has contributed to substantial improvements in parts of the write-up of this study.
- Together they constituted the committee that oversaw the research reported on in the following pages. Their joint interaction with me in discussing the proposal underlying the research constituted something more valuable than the sum of the already valuable contributions each of them had made to my work, and has significantly contributed to my further specifying the research interests and to refining the methodology adopted for the study.

I am particularly indebted to my two research assistants, Roberto Armando and Muriel Visser, for the most valuable contributions made by them to establishing the data base for this study and for participating in analyzing its content, for the personal sacrifices they have shown to be prepared to make in the interest of the advancement of knowledge, and for their excellent team work.

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Finally, a study like the one presented here, can only yield the desired result if the researcher is permitted to take up an integrated place within the environment he intends to study. I thank the participants of the ESMI-1 and ESMI-2 workshops for the warmth of our continuing association and friendship.

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LIST OF ABBREVIATIONS

- BA: Bandido armado (armed bandit), emic term used in Mozambique for perpetrators of violence against the population and the infrastructure of the country on the part of RENAMO
- DPCCN: Disaster Control Office, Maputo, Mozambique
- ESMI: *Elaboração Sistemática de Material Instrucional* [Systematic Design of Instructional Material]. In the instructional context in which this study took place, the abbreviation acquired a range of additional connotations, related to such things as professionalism, working in a disciplined manner, being successful, approaching problems methodically, professional association, etc.
- ESMI-1: A course/workshop in systematic instructional design conducted in Mozambique in 1986 (Visser & Keller, 1989).
- ESMI-2: A second workshop in systematic instructional design held in Mozambique in 1989, which served as a basis for the present study
- FDS: Defence and Security Forces
- FRELIMO: Mozambique Liberation Front (before independence) / Political party in power (after independence)
- GDR: German Democratic Republic
- INDE: National Institute for Educational Development, Maputo, Mozambique
- IPHEM: Heloisa Marinho Research Institute, Brazil
- PRM: People's Republic of Mozambique
- RENAMO: Mozambican National Resistance, rebel movement opposing FRELIMO government
- RSA: Republic of South Africa

FOREWORD

The present study was carried out in the framework of a continued effort to solve motivational problems surrounding the researcher's instructional activities in Mozambique. Trying to approach these problems in a serious, methodical way started in 1986, when the researcher was asked to conduct a workshop in systematic instructional design for a participating audience facing adverse motivational circumstances. Particular problems were envisaged to occur in periods between class sessions, when the instructor would have little influence on the participants' behavior. In the course of the workshop, a strategy was developed, and tested, that allowed the instructor to cope with that problem (Visser & Keller, 1989).

The present study should be seen as an attempt to aid the naturalistic generalizability of the developed strategy, the clinical use of motivational messages, which is believed to be relevant in the first place in circumstances similar to the ones described in this study. On the other hand, no evidence has emerged from the study indicating that the strategy could not be used in circumstances significantly different from those providing the setting for the present research. It is hoped that particularly the exploration in this study of questions as to *how* and *why* motivational messages worked in the researched setting, will help other instructional developers and practitioners to adapt the medium to different contexts, and to improve its effectiveness in general.

ABSTRACT

In this study the results are presented of a disciplined inquiry into the area of motivation to learn and systematic ways of influencing learners in this regard. Attention focuses on the *clinical use of motivational messages*, a strategy based on Keller's (1984, 1987a&b) ARCS model. Through this strategy learners are prompted, by means of, usually written, messages, normally delivered outside the classroom periods, to adjust their disposition to undertake learning tasks. Such messages are designed and used according to a systematic, replicable process.

It is defended that a naturalistic mode of inquiry is the most appropriate one for the particular research interest, and that, within that mode, a case study approach, within an embedded multiple-case perspective, is called for. Reference is made to the existing knowledge base in the area of motivational design, as well as to that of the chosen research paradigm and methodology.

Three basic research interests are addressed in the study, i.e. that of the validity of the strategy under consideration, the question as to *how* and *why* the messages work, and the issue of their optimality. Evidence is presented and discussed to substantiate the proposition that the motivational messages strategy worked similarly well in the case of two of its applications almost three years apart. Of a total of ten propositions regarding the interaction between the messages and

the learners, the messages and the instructor, and the messages and the environment, nine are found substantiated and one insubstantiated in the light of the data collected. It is also argued that evidence supports the contention that the strategy adapts itself to the circumstances of its application.

As to the overall interpretation of the totality of phenomena discussed, the study concludes that motivational messages should not be looked upon in isolation, but as part of a more complex *motivational system*, in the context of which they enhance the effectiveness of the other components involved.

INTRODUCTION

THE OVERALL AREA OF INTEREST:

Educational efficiency and effectiveness as a prerequisite for development

Among the priorities mankind sets itself, survival probably ranks highest. Food, shelter, and conditions for procreation are basic concerns in that respect. Next comes decency of survival. Physically staying alive may remain a motive for action during a limited period of time, but if it stays without the prospect of doing so autonomously, the motive may gradually disappear. Self-sufficiency and self-reliance are fundamental concepts in that respect. At a third level of concern come questions related to the quality of life. Societies, social systems and subsystems within societies, as well as individuals, assess their needs, and develop strategies to satisfy those needs, in the above context.

While certainly not a panacea for the satisfaction of any particular need, human resource development, and particularly education in that connection, can often be identified as an appropriate strategy. My own, nonspecific, observations of human behavior and choices in different cultural, and particularly in different material contexts in various parts of the world,

indicate that education gains importance as a strategy to satisfy needs at the second and third levels of priorities mentioned above, those of attaining self-sufficiency and self-reliance and of improving the quality of life. In circumstances where physical survival is still an important issue, attention tends to be turned away from education, particularly at the level of individual action. People's interests shift to strategies that yield more immediate results.

The concern for self-sufficiency and self-reliance is a fundamental one, and so is the role of education in attaining those goals. Morgan (1989) has identified the "significant improvement of educational efficiency [as] a *sine qua non* for continuing socioeconomic development, if not for national survival" (p. 49). No society would be satisfied in the long run if its survival depended on sources it had no control over. Something similar holds true for individuals. However, societies differ rather largely in their approaches to striking the balance between the attainment of individual and societal self-sufficiency and self-reliance. As education plays such an important role in satisfying needs related to the attainment of self-sufficiency and self-reliance, the improvement of effectiveness and efficiency of educational interventions can therefore be identified as a key issue in individual and societal development. This is particularly true for societies whose development

policies are geared towards shifting the attention from strategies for mere physical survival to those that ensure their existence in a longer term perspective and in an independent manner. One such society will provide the context for the proposed study. The substance of the proposed study, the relevance of the research problem, and the methodology proposed to find useful answers to the questions asked, should be looked upon against the background of the above defined area of interest.

THE MORE SPECIFIC QUESTION:

The improvement of instruction by enhancing the motivation to learn

"Our theories or models of design do not take enough account of motivation, even though we may acknowledge that motivation effects are stronger than treatment effects." With these words, Briggs (1980, p.49) summarizes his feelings regarding the attention given, during thirty years of instructional design experience, to the phenomenon of human motivation to learn: passively recognized as important, but without adequate consequences at the active level as regards what instructional designers actually do in their daily professional lives.

The question: "How can we motivate learners" is an important one in an instructional design context. How well materials or courses may have

been designed, they will not lead to learning unless the learner is willing to attend to them.

Instructional design experience has concentrated for a considerable period of time on improving the efficiency and effectiveness of instructional interventions by providing a more adequate structure to the learning process. The basic question in this context is (Reigeluth, 1983a): Given desired instructional outcomes, and given the set of conditions under which instruction is to take place, what is the best method by which these outcomes can be obtained? An interesting variety of models has been developed, and reported on in the literature, that address the above question (e.g. Andrews & Goodson, 1980; Reigeluth [Ed.], 1983b). While in these models it is normally recognized that, besides the appropriate configuration of the learning process, motivational factors play a role as well in determining the effectiveness of instruction, the importance of these factors is rarely reflected in explicit provisions inherent in the model which would allow the instructional designer to address this area adequately.

Various authors (e.g. Keller, 1979; Reigeluth, 1979), have called attention to this omission, and the desirability to address it has been stressed (e.g. Martin & Driscoll, 1984, Reigeluth, 1989). Recent years have shown notable efforts to understand and influence student motivation (e.g. Brophy, 1983; Keller, 1979, 1983; Wlodkowski, 1981). While much work has still to be

done to operationalize and validate the approaches advanced by these authors (Keller, 1987a), some initial steps are being taken in that direction (e.g. Bickford, 1988). The study proposed here is in line with that same concern. It is particularly interested in finding answers to the question what can be done to prompt learners into changing their motivational disposition to learn in a desired direction, given the presence of severe motivational restraints in a real-life instructional context. Given that interest, a research paradigm is chosen the assumptions of which best accommodate the problem under investigation. Within the resulting mode of inquiry, generally identified and referred to in the literature as *naturalistic* (e.g. Stake, 1978; Guba, 1981), a *case-study* approach is chosen, as it best contributes to *understanding* and is sensitive to the *diversity* expected to be found in the given context (see e.g. House, 1983; Yin, 1984). Questions related to the above choices will be explored in greater detail under "method".

CONCEPTUAL FOUNDATIONS

Even though the primary emphasis in instructional design has been on factors directly influencing learning effectiveness, i.e. on the motivating consequences of learning as opposed to the factors that stimulate the motivation to learn, there have been some important contributions. For

example, one result of instructional design has been, so far, besides the obviously more adequate configuration of what should be learned, to get rid of what should *not* be learned, i.e., to prevent learners from becoming demotivated by having to attend to tasks that would be perceived as irrelevant. In other words, instructional design procedures help us enhance the relevance of instruction.

Also Mager's (Mager & McCann, 1961, Gagné, 1965) classical intervention at Varian, Inc., as well as his subsequent work in this regard (Mager & Clark, 1963), clearly show that the motivation and direction resulting from a person's being made aware of what s/he should be able to do can be more important for learning than actual instruction. In fact, what Mager did was simply create Gagne's (1985) first two instructional events, 'gaining attention' and 'informing learners of the objective', leaving it to the learner to identify/select appropriate resources, and structure and complete the remaining part of the learning process. Given the availability of resource materials, motivation is not just a necessary condition for learning to take place, in cases like the above, where no particular instruction was delivered, it may even be a sufficient one.

In the psychological literature, motivation has been linked to the principles of tension or need reduction in Freudian psychoanalytic theory and Hullian drive theory; to expectancy of goal attainment and the incentive

value of the goal in Lewin's field theory, Atkinson's achievement motivation theory, and Rotter's theory of social learning; and to the striving for self-understanding and self-realization within one's environment in attribution theory by Heider and Kelley as well as in humanistic psychology by Maslow, Rogers, and Allport (Weiner, 1980). None of these theoretical approaches has been able to present a full picture of why humans, or organisms in general, behave as they do. They each highlight particular aspects of human behavior as seen from particular points of view. Weiner stresses that they are not commensurate and should therefore not be looked upon from a perspective of "hierarchical ordering of 'Truth'" (p. 6). They should rather be seen as complementary.

Considerations like the ones inherent in the above mentioned theoretical approaches have led others to devise ways of enhancing people's motivation, particularly with respect to the accomplishment of learning tasks. Two different conceptions can be distinguished here. One such conception looks upon motivation as a general state to be achieved prior to the implementation of learning tasks in order for learning to be efficient and effective. This leads to approaches such as conducting motivation workshops (McClelland and Steele, 1972) or executing motivational (metacognitive) skills training interventions (McCombs, 1983, 1984). In the other conception, motivation is seen as a continually changing set of factors influencing the

individual's learning behavior. Instructional interventions based on this conception (Keller, 1984, 1987a&b; Wlodkowski, 1981, 1985) are oriented towards strategies that aim at setting the motivational factors at appropriate levels for optimal learning. There is evidence that both types of approaches result in positive effects. They should probably be seen as complementary rather than as preemptive. Both the pre-instructional motivational disposition and the control of motivational factors during instruction are important for efficiency and effectiveness of learning.

The intervention presented in this paper, the *clinical use of motivational messages*, pertains more to the latter conception of motivation: How can people be helped to overcome their motivational restraints in a given instructional context? Its principles were developed experientially as documented in Visser (1988a) and Visser & Keller (1989).

The two aforementioned approaches to address this problem show similarities as well as differences. Both Wlodkowski's (1981, 1985) time continuum model of motivation and Keller's (1983, 1984) ARCS model analyze the motivational requirements of the learner in terms of different components. Wlodkowski (1981) distinguishes between six different motivational factors, i.e. attributes, needs, stimulation, affect, competence, and reinforcement, that influence the learning process in its different phases. These factors are presumed to influence motivation in a fixed sequence, and a

model is provided which links the six factors to motivational strategies, pertaining to a variety of schools of motivation theory, that can be readily implemented by the instructor.

Keller (1984), on the other hand, provides a problem solving model which, first of all, has the instructional designer or instructor analyze the motivational requirements of the audience in terms of a more compact set of only four factors, i.e. attention (A), relevance (R), confidence (C), and satisfaction (S). Each of these factors encompasses a host of specific variables and applied strategies that assist designers and teachers in identifying and solving motivational problems. The components of each factor can be organized into several different types of subcategorization schemas (e.g. Keller, 1984, 1987a), but the most commonly used one (Table 1) has three subcategories and associated process questions (Keller, 1987a) for each of the four factors.

Unlike the assumption made in Wlodkowski's time continuum model, these factors are not considered by Keller to be specifically linked to particular phases of the learning process. It is recognized that, although the emphasis may shift in the course of instruction (e.g. more attention getting strategies at the beginning and more satisfaction producing strategies at the end), requirements relating to any one of the four motivational components may occur at any time, whence the need for a flexible response and a

Table 1

Motivational factors and subcategories of the ARCS model (Adapted from Keller, 1987b)

<u>Categories and subcategories</u>	<u>Process questions</u>
A ttention	
A.1 Perceptual arousal	o What can I do to capture the learner's interest?
A.2 Inquiry arousal	o How can I stimulate an attitude of inquiry?
A.3 Variability	o How can I maintain the learner's attention?
R elevance	
R.1 Goal orientation	o How can I best meet my learner's needs? (Do I know their needs?)
R.2 Motive matching	o How and when can I provide my learners with appropriate choices, responsibilities, and influences?
R.3 Familiarity	o How can I tie the instruction to the learner's experiences?
C onfidence	
C.1 Learning requirements	o How can I assist in building a positive expectation for success?
C.2 Success opportunities	o How will the learning experience support or enhance the students' beliefs in their competence?
C.3 Personal control	o How will the learners clearly know their success is based on their efforts and abilities?
S atisfaction	
S.1 Natural consequences	o How can I provide meaningful opportunities for learners to use their newly acquired knowledge/skill?
S.2 Positive consequences	o What will provide reinforcement to the learner's successes?
S.3 Equity	o How can I assist the students in anchoring a positive feeling about their accomplishments?

problem solving attitude on the part of the designer or instructor. Accordingly, the ARCS model is geared towards a systematic approach to motivational intervention which follows a general problem solving and design process (Keller, 1987b). The process begins with an extensive audience analysis which forms the basis for identifying motivational objectives. These objectives guide the design, development, and implementation of motivational strategies.

Although the ARCS model primarily addresses the motivational requirements of the learner in the context of a specific lesson or course of instruction, its flexibility allows one to take into account more long term motivational goals as well. As is pointed out by Bohlin (1987), the motivational dimensions specified by the ARCS model refer to internal states of the learner. This poses the problem that, unlike some of the factors in Wlodkowski's model, they cannot be manipulated directly. Instead, external events have to be created that prompt the learner into modifying his/her internal motivational disposition. Conceptually, the problem solving approach inherent in the application of the ARCS model is more complex than the algorithmic approach advocated by Wlodkowski. On the other hand, the modification of the internal motivational disposition of the learner, aimed at by the ARCS model, may be considered to touch on longer lasting effects, as the outcomes relate to changes the learner has brought about him

or herself internally. Bohlin (1987) refers to the "adaptability to a wide variety of teaching methods and processes" (p. 14) as the relative strength of the ARCS model in a cross-cultural comparison with methods of designing motivating instruction presented in the Soviet literature. He claims this to be of particular importance in the context of Western educational programs, where an "extreme variance in classroom processes is encouraged to accommodate a wide range of learning styles and to develop individuality" (p. 14).

The present study was carried out in Mozambique, a context far removed from both the Western and the Soviet instructional experiences, although, interestingly, influences from both these worlds can certainly be found in the educational framework of the country in question, a young nation which has gone through a period of armed struggle before attaining its independence. It was the process of cultural and intellectual emancipation that accompanied the liberation struggle that helped shape future educational practice against the background of traditional and colonial influences, while taking into account educational experiences accumulated in the socialist as well as in the Western world.

CONTEXT FOR THE APPLICATION OF THE MOTIVATIONAL INTERVENTION

The specific purpose of the present study was to test the application of a motivational intervention, the *clinical use of motivational messages*, based on the ARCS model, in the context of a training workshop in the systematic design of instructional materials, carried out among professionals working in different sectors pertaining to one particular ministry. Each of these sectors had either already been active in the field of instructional materials production or was expecting to take on responsibilities in that area. The workshop was carried out under the responsibility of one of the national directorates of the ministry in question, particularly with a view to training the staff of a newly created institute under its responsibility, which would have responsibilities for the production of self-instructional materials for adult audiences. The number of participants from the institute in question, together with those of the national directorate itself, was expected to be relatively small, whence other sectors had been invited to participate. Running the workshop would be financed under contract between an international donor agency and the referred national directorate. Expected adverse motivational conditions were foreseen to provide an adequate setting for this study to be considered a *critical case* in the sense defined by Yin (1984, p. 42). It would allow a test of the theoretical propositions of the ARCS model

in a situation where it would be difficult to attribute motivational effects to other external events than the application of the motivational intervention based on that model. In other words, if the intervention worked in this case it should be expected to work in most other cases, governed by less severe motivational restraints.

The course was planned to have a duration of approximately three months. It was assumed that 'interesting' motivational challenges would be present in that setting, both in terms of contextual factors related to the society at large (see e.g. "Mozambique is last", 1987; Visser & Pereira, 1988; Visser & Buendía Gomez, 1989), the specific work environment in the particular ministry, and as regards the instruction itself. The latter factors are briefly discussed in the next two sections.

INSTRUCTIONAL CONTEXT AND COURSE REQUIREMENTS

The referred instructional system design course was planned to consist of an intensive eleven and a half week term of study. During that period two weekly sessions of three hours each would be conducted during ten weeks, partly in an instructor-led lecture format and partly in a facilitator-conducted workshop fashion, with a strong emphasis on the latter mode of delivery. The total of 20 course sessions would be preceded by an introductory session held eleven days before the start of the remaining ten weeks of the course.

The period between the introductory session and the remaining 20 regular course sessions was considered necessary to give students time to warm up and organize themselves to be able to cope with work demands which they were expected to perceive as excessive. Besides the course sessions already mentioned, participants were also planned to have structured access to the facilitator during an additional weekly period of half a day if they wished to receive further assistance. All sessions would be conducted at an institutional venue during working hours. Participants would be expected to devote at least 10 hours per week to independent study and skills application assignments.

In addition to their attendance at the 20 planned course sessions, it was expected that the participants would engage in the following activities:

- * Autonomous study, both individually and as a group.

This was to be carried out in accordance with a given plan, including rigorous evaluation deadlines. Materials to be studied would include a comprehensive text on instructional design, written in an unknown foreign language (Spanish), which is accessible to the Portuguese speaking audience only because of its similarity with Portuguese, which for a majority of them would already be a second language. This highly complicating condition was a natural consequence of, on the one hand, the unavailability of adequate study texts in the Portuguese language,

and, on the other hand, the audience's lack of command of other foreign languages, like English, in which adequate study materials would have been available. Complementary materials in Portuguese would also have to be studied.

- * Participation in discussion, in different group settings, of relevant content matter studied.
- * Participation, individually or as a group, in activities applying acquired knowledge/skills.
- * Participation in 3 test sessions evaluating mastery of content matter related to the above.
- * Completion by each individual of a systematic instructional design project.
The result was expected to be a suitably validated instructional package on a topic of the participant's choice, completed in accordance with set deadlines and given evaluative criteria.
- * Oral presentation and discussion of progress and results of the above design projects.
- * Individual preparation of a full written report, in 2 parts, on the design project.
- * Participation in formative evaluation of the course itself.

MOTIVATIONAL CONDITIONS

Completion by the participants of the above tasks was expected to be influenced by a variety of conditions that would directly and indirectly affect their motivation. These conditions can be identified by systematically reviewing the various motivational factors contained in the ARCS model, and identifying positive and negative aspects of the psychological, social, and physical environment of the audience. Such factors were expected to be related to aspects like the following:

- * Absence of a positive individual choice to participate in the course.
- * The tendency to accept tasks because of social commitment or under social obligation, but not necessarily out of individual commitment.
- * Absence of material rewards.
- * Difficult material circumstances, particularly as regards the fulfillment of basic needs.
- * Dwindling socio-ideological frame of reference, resulting in feelings of greater insecurity and lack of stable subsumption of individual motives in societal aspirations.
- * Conflict with expectancies based on exposure to less demanding training in the past.
- * Conflict between course demands and established, but not approved, conduct on the job.

- * Time conflicts with professional and personal obligations.
- * Uneasiness related to the change process inherent in the training objectives.
- * Frustration related to some results of the formative evaluation of the design assignment.
- * Possible threat to authority of participants superordinated to other participants.
- * Problems related to having to study from materials in an unfamiliar/unknown language.
- * Excessive demands on inventiveness to solve organizational aspects of the design project.

THE INTERVENTION: THE CLINICAL USE OF MOTIVATIONAL MESSAGES

The *clinical use of motivational messages* is a strategy which consists of the use of messages, designed by well defined means, such that their content has a desirable effect on the learner's disposition to engage in learning tasks. The usual format of these messages is of the type shown in Figure 1 (see page 19). It is produced by folding a letter size or A4 sheet of paper twice. Figure 2 on page 20 shows two examples of motivational messages used on

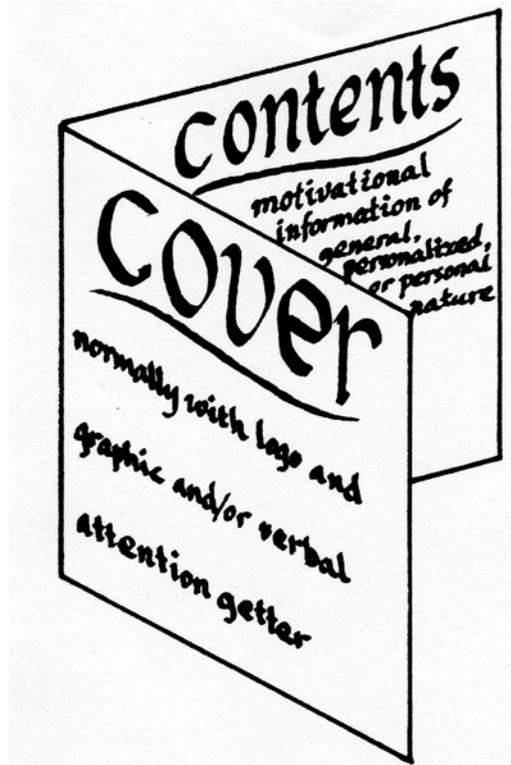


Figure 1. Typical format of a motivational message.

a previous occasion (a similar workshop held in 1986), and which were also used in the workshop which formed the basis for the present study. The messages are normally distributed in some way outside of class during the periods *between* the various class sessions.

Because of its flexibility as a problem-solving tool, the ARCS model (Keller, 1987a&b) is used as the analysis base for the design and controlled use of the messages that are exchanged between the instructor and the

COVER	CONTENT
	<p>A abordagem sistêmica pode resultar em efeitos dramáticos na qualidade e na eficácia da instrução.</p> <p>A análise instrucional pretende identificar tudo aquilo que é necessário para a instrução, excluindo-se tudo aquilo que não seja absolutamente necessário para atingir uma determinada meta. A avaliação formativa permite provar ou desprovar a correção da análise instrucional feita.</p> <p>Aplicando uma abordagem sistêmica, David Markle rediseñou um curso de pronto-socorro para operários industriais baseado na utilização de vários meios instrucionais. Neste caso, uma testagem rigorosa permitiu reduzir o tempo de instrução de 12 horas a 7½ horas, i.e. uma redução com 37½ %. Além disto, os piores resultados obtidos pelos alunos do novo curso eram mais altos que os melhores resultados obtidos pelos alunos do curso anterior.</p> <p><i>Aplicando ESMI você também será capaz de melhorar a qualidade e a eficácia dos seus materiais instrucionais. Aprendendo ESMI você ganhará prestígio profissional.</i></p>
COVER	CONTENT
	<p>notícias</p> <p><u>Maputo, Sábado, 22 de Novembro de 1986</u></p> <p>Telefonista memoriza 15 mil números</p> <p>Uma telefonista chinesa, de 26 anos, memorizou 15 mil números de telefone do seu país — noticiou um jornal de Beijim.</p> <p>Gou Yanling fez no sábado, em Beijim, uma demonstração pública da sua prodigiosa memória, respondendo sem erro a perguntas em frente de mil pessoas — acrescentou o «China Daily».</p> <p>O Ministério chinês dos Correios e Telecomunicações anunciou todas as telefonistas a seguiram o exemplo de Gou, de a grande serviço ao público.</p> <p>Gou disse que aperfeiçoou sua maneira de memorizar números de telefone e que separa poder fixar um total de 18 mil.</p>

Figure 2. Examples of two motivational messages, showing features of cover and content design.

learners in order to help the latter overcome their motivational restraints. This strategy has two features: (a) it keeps track of the motivational requirements of the learners, and (b) it responds to these requirements in a flexible manner, i.e. at the appropriate moment (usually outside class time, i.e. when normally the instructor would not be able to influence the learner), and in a way which takes into account differences in individual needs. As motivation is an internal state of the learner, hence not something the instructor can accomplish, the intervention should be an unobtrusive one, leaving it to the learner to create his or her own motivational conditions. Motivational messages are intended to prompt the learner to do precisely that. The overview below shows some of the possible variation in attributes of the messages.

<u>FORMAT</u>	<u>APPROACH</u>	<u>MODE OF COMMUNICATION</u>	<u>MODE OF DELIVERY</u>	<u>TIMING</u>
greeting card	general	interactive	personally delivered	immediate
letter	personalized	non-interactive	through intermediary	deferred
mini-poster	personal		left to be found	

The content of the messages, and the timing of their distribution, are normally derived on the basis of the following inputs:

- 1) The student's progress as regards the different tasks required to be performed.

It can be foreseen what type of particular difficulties a learner may be facing when working on specific autonomous study assignments in accordance with the given planning. For some other difficulties, related to activities for which there is a less definite planning, this will be more complicated.

- 2) Anonymous student self-report of feelings towards progress made and about his or her participating in the course in general.

To that effect, students respond to an open-ended questionnaire distributed regularly, generally on a weekly basis, at an appropriate moment during a class session. The term *appropriate* used here should be interpreted as to refer to those moments during class sessions when students would perceive it as natural that they would fill out the questionnaire. In this questionnaire the student is asked to give a spontaneous reaction to the following three questions:

- What were, in order of importance, the three factors that, during the past week, most severely damaged your motivation while carrying out your assignments?
- And what were the factors that had the most positive influence on your motivation?

- What would most urgently require attention at this moment in order to improve the quality of the course?

In order to encourage students to continue to respond seriously to each of the questionnaires that are content wise identical, on each occasion a different introductory text is used, linking the use of the questionnaire to the progressing development of the course. Appendix 1 shows an example of one of these questionnaires and gives the translation of the introductory text used on the particular occasion.

- 3) Spontaneous student reactions to progress made and about other motivational aspects.

Positive and negative factors, internal and external to the course environment, are taken into account in that regard.

- 4) Comments solicited by the facilitator in follow-up contacts with the students.

Such contacts can be made to clarify fuzzy aspects in the analysis of data from any of the above inputs.

- 5) Evaluation results regarding the student's performance on the different tasks.

The ARCS model (Keller, 1987b) allows these various inputs to be analyzed and interpreted in terms of the four dimensions and subcategories specified earlier, which, for the sake of convenience, are repeated below.

A ttention	R elevance	C onfidence	S atisfaction
A ₁ Perceptual arousal	R ₁ Goal orientation	C ₁ Learning requirements	S ₁ Natural consequences
A ₂ Inquiry arousal	R ₂ Motive matching	C ₂ Success opportunities	S ₂ Positive consequences
A ₃ Variability	R ₃ Familiarity	C ₃ Personal control	S ₃ Equity

These aspects should be related to the learners as individuals, to their being members of the group of participants in the course, to their potential membership of a larger professional community, as well as of other relevant social networks. The following schematic representation depicts this process.

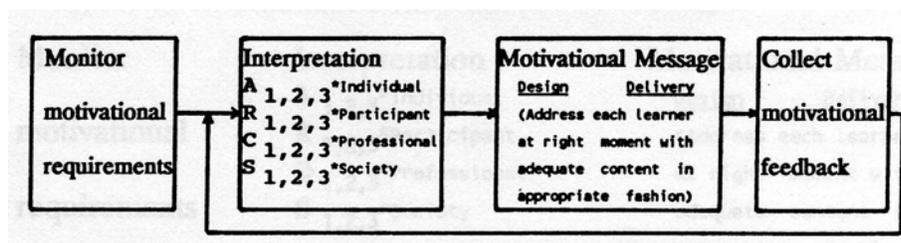


Figure 3: The design process of motivational messages

It should be noted that a learner can be both under and overaroused with regard to any of the motivational dimensions and subcategories. In a graphic representation of *performance vs. arousal* a learner's situation as to any of the different motivational aspects can be thought of as a point on an inverted U-curve, the region near the top representing the ideal position

(Keller, 1987b). Motivational objectives can hence be conceived which reflect the desired shift of the learner on this curve in either direction.

MOTIVATIONAL OBJECTIVES

The aim of applying the motivational messages strategy is to prompt learners into acquiring and maintaining levels of motivation, along the dimensions given above, that will optimize their learning. Ideally, their levels of attending to the learning tasks, of perceiving the relevance of what they are studying and what they are preparing themselves for, of confiding in their capability to complete the study assignments and to apply the skills they are being trained on in the context of their daily work, and of feeling satisfied with their engagement in this learning experience should all be on or near the top of the inverted u-curves for the various motivational dimensions. Below follows a description of what this means in the context of the course that served as a setting for the present study. It should be understood that the analysis presented below is a generic one. A more detailed definition of objectives would result if the motivational conditions of each of the learners were analyzed individually. The presentation of the results of this study will reveal such further detail.

Through the intervention, learners should be led to view the total learning task as a finite set of portions, each of which they will be able to

engage in and complete in a way perceived by themselves as being successful, provided an adequate study effort will be put into it. As it is expected that the extent of this study effort will for most learners be a considerable one, they should not confide in their ability to cope with the learning tasks independently of such an effort. They should discover that they will be able to access and organize all necessary resources required for a successful instructional design effort, and that what they are learning is transferable to their professional field of activity.

Learners should start looking upon systematic instructional design as a sound alternative to their regular practice of designing instructional materials, worth investing the learning effort in, but without perceiving it as a panacea, or as something without which they will not be able to survive professionally. Though there may be few prospects for short-term career improvement as a consequence of their taking part in the course, participants should be led to perceive their successful completion of the course as a relevant stepping stone in a long-term perspective of career and personal development.

An adequate level of attention will have been reached when learners will daily be spending time, individually and collectively, on the execution of given assignments, when they attend class sessions, being properly prepared, and participating in an active manner, when they will not be postponing their

course work to moments close to the given deadlines, and when their attention will not be diverted from current tasks to concerns regarding the end result of the course. Trying to reflect on what they have learned in the context of their regular tasks will be seen as another strong indicator of adequate attention.

The motivational intervention should result in learners becoming aware that completion of difficult tasks can as such be a gratifying experience, particularly when these tasks are perceived as being relevant. It should furthermore lead them to derive satisfaction from their becoming integrated in a recognized professional field. Perceived recognition from their peers, supervisors, and the instructor for their learning accomplishments, as well as feelings of togetherness with colleagues who are going through similarly difficult learning experiences, are other aims of the intervention.

The above objectives were set as guidelines for the study of the effectiveness of the motivational intervention under scrutiny. They were laid down in the research proposal that preceded the data collection. As will be shown in discussing the results of the study, it has been possible to collect evidence supporting the claim that these objectives were indeed attained. In accordance with the dynamics of the process, it was assumed that other motivational needs might become evident during the course, particularly when more detail would become available regarding the various individuals

participating in the course. The design of the intervention would then have to be adjusted and managed accordingly.

TRANSFERABILITY

The nature of the intervention described above is typical of this particular area of interest. While the result of an instructional design effort in the restricted sense, i.e. excluding a systematic concern with motivation, can normally be evaluated on the basis of the quality of its products (which themselves are the result of a process), this cannot be done in the case of a *motivational design* effort. Although the motivational messages referred to above are carried by tangible pieces of paper, they should not be looked upon from the perspective of their being fixed pieces of information, but rather from that of their representing a remarkable instance of - and instant in - the process of the joint production and sharing of information (Rogers, 1983), that of *information as construction* (Dervin, 1981), involving the interaction of students and teacher.

This process, as outlined above, underlying the clinical use of motivational messages, is a systematic one. It takes into account relevant portions of the instructional context, and is based on replicable procedures that serve to guide the motivational designer/facilitator. It is once more emphasized in this context that the process in question is *not* just an

algorithm, but a flexible problem-solving approach. Replicability, therefore, does typically not refer to reproducibility of the external features, but to the adaptive application of the same principles in different circumstances on the basis of naturalistic generalization (Stake, 1978).

The present study therefore chooses a paradigm, approach, and design most likely to contribute to this type of generalizability. In the next chapter the object of the study and the particular research questions, as well as the chosen methodology to respond to these questions, will be dealt with in detail.

METHOD

ADVANCE ORGANIZER

"The eternal mystery of the world is its comprehensibility" (Einstein, 1983, p. 292).

THE OBJECT OF THE STUDY

The research methodology used in the study and discussed below intended to extend earlier exploratory research (Visser & Keller, 1989) as regards the effectiveness of the motivational messages strategy and the validity of its analytical base, incorporating the earlier results, together with new data to be collected, in an embedded multiple-case perspective. It was, besides further exploration, also driven by explanatory concerns, while providing an opportunity for *literal replication* (Yin, 1984), thereby building a stronger case for *naturalistic generalization* (Stake, 1978, 1986, 1988). The multiple-case perspective, in which the present study is integrated, was chosen as a means to strengthen the validity base of the strategy of the clinical use of motivational messages, as well as, in a wider sense, that of the

underlying motivational problem solving analysis tool, Keller's (1984, 1987a&b) ARCS model.

MODE OF INQUIRY

The application of a motivational strategy like the clinical use of motivational messages is a complex matter. It basically consists of the adoption, by an instructor or facilitator, of a continuous motivational problem-solving mode extended over the full duration of an instructional process, as well as over short periods preceding and following it. During that time, which for the students consists of such varied events as participation in classroom sessions, performance of autonomous and group learning activities, work towards getting course products completed by given deadlines, submitting themselves to evaluations and being confronted with evaluation results, and, importantly also, organizing and re-organizing their lives such that study activities can find an integrated place among their other concerns and be managed accordingly, an almost infinite number of changes can be expected to take place. And such changes affect their motivation.

The process involved in the clinical use of motivational messages assumes that the instructor, or instructional facilitator for that matter, concurrently adopt the role of *motivational facilitator*. Through a series of

different ways of interacting with the learners, both at the individual and at the group level, s/he monitors changes in the motivational variables of the learners, and, through the same channels, provides feedback to the learners that helps them overcome their motivational restraints.

This being so, research interest should be focussed on the process, rather than on the final result only. That process is characterized by inputs, actions, outputs, and feedback in terms of rather complex patterns developing over time within changing contexts. Campbell (1984) refers to the concern with "the crucial role of *pattern and context* in achieving knowledge" (p. 9) as an important reason to adopt research modes that go beyond the traditional laboratory settings, particularly those that can be categorized as *case studies*.

Guba and Lincoln (1982), referring to Cronbach & Suppes' (1969) definition of *disciplined inquiry*, emphasize that such inquiry does not necessarily coincide with the exclusive use of what they call the *rationalistic paradigm* - previously referred to by the same authors (Guba, 1981; Guba & Lincoln, 1981) as the *scientific paradigm* - but that disciplined inquiry can just as well be based on a *naturalistic paradigm*. They point in that respect to the fact that the successes of the application of the rationalistic paradigm in social and behavioral inquiry are less conspicuous than often believed. Particularly the apparent impossibility to aggregate the results of more than 100 years of

psychological and educational research in a meaningful way, and the fact that researchers often have to compromise between the due application of the basic principles of the rationalistic paradigm and pragmatic considerations as regards doing research in a given political and ethical context, are matters of concern in that respect.

It is noted in this connection that the emphasis on the rationalistic mode of inquiry in social and behavioral science is largely based on the presumed successes of the application of that paradigm in the natural sciences, particularly in physics. However, Heisenberg (1930) has shown that even in so rigorous a science as physics the classical view of the world in terms of causal relationships between objects existing in space and time does no longer apply as soon as we want to look upon that world taking into account the detail of atomic and subatomic structure. In the latter case it becomes evident that a single conception of reality is no longer possible, but that alternate views yield different descriptions of what we perceive to be "reality". If we want causality, occurrences in time and space can only be predicted in terms of a probability distribution; if, on the other hand, we opt for a description in terms of occurrences that are rigorously defined in the space-time continuum, then we have to accept the fundamental uncertainty (as given by Heisenberg's *uncertainty principle*) in the way they are related to each other. Dutch physicist Casimir (1983), crediting Danish physicist Niels

Bohr as user of the concept and Von Kármán, a famous name in aero- and hydrodynamics, as its possible inventor, links the notion of "haphazardness of reality" to the history of physics since the early decades of the present century.

In view of the fact that modern physics points to complementarity of multiple views, rather than to their unicity, Heisenberg (1930) concludes that it is now profitable to review the fundamental discussions ... of the difficulty of separating the subjective and objective aspects of the world. Many of the abstractions that are characteristic of modern theoretical physics are to be found discussed in the philosophy of past centuries. At that time these abstractions could be disregarded as mere mental exercises by those scientists whose only concern was with reality, but today we are compelled by the refinements of experimental art to consider them seriously (p. 65).

The history of science shows a succession of different descriptive systems attempting to catch the world in as generic and parsimonious a way as possible. The developments in twentieth century physics have made us more aware of the importance that should be attached to the *reality of description*, rather than to the *description of reality*.

Interestingly, Firestone (1987), in comparing the relative merits of a qualitative and a quantitative approach to researching one single issue pertaining to the realm of the social sciences, comes to a similar conclusion as

Heisenberg in calling attention to their *complementarity* in using different forms of rhetoric, based on different philosophical underpinnings, to bring forward their argument.

Besides the above argumentation, it can be maintained (Guba and Lincoln, 1982), that the underlying assumptions and axioms of the rationalistic paradigm make it less well suited to the study of many problems in social and behavioral science than the naturalistic paradigm. Various authors have alluded to that contention in reviewing extensive areas of research. Clark & Angert (1979) identify the "collective inattention to the totality of the learning environment" (p. 7) as the most pervasive shortcoming in the ATI research reviewed by them. Consequently, they call for more comprehensive research models, able to effectively relate the various attributes of learner, teacher, treatment, resources, and environment. Schramm (1977), in reviewing our knowledge about the effectiveness of media, refers to the "wastefulness of the search for a super-medium" (p. 36) and the fact that "perhaps the most regrettable characteristic of the long line of instructional media experiments has been their *macro* quality" (p. 36), making it clear that "it would have been more useful to have a larger number of micro studies - trying to identify the unique strengths and weaknesses of a given medium for a given purpose, trying to *maximize* the learning from a particular medium and thus considering *how* it is used and how it can be used *best*" (p.

36, the former emphasis mine, the latter two are Schramm's). The idea of maximizing learning in a given purposeful context as an important research concern is taken up again, more than ten years later, by Reigeluth (1989). He concludes that "the field [of educational technology] is entering into a *synthesis phase* in which the focus is on building components into optimal models of instruction for different situations" (p. 70), and he therefore urges researchers to "place greater emphasis on *optimality* as opposed to *validity*" (p. 73, my emphasis).

Moreover, there are many instances in which naturalistic inquiry should be considered not just an alternative because other modes of inquiry fail, but the preferred mode of inquiry, particularly as it accommodates contextual relevance and is sensitive to process, rather than just outcome. Cronbach and Suppes (1969) call naturalistic observation a "significant form of disciplined inquiry" (p. 14). Guba, in discussing the underlying assumptions of both the rationalistic and the naturalistic paradigms, concludes that in choosing the most appropriate paradigm "the issue ... is not which assumptions are 'true' but which offer the best fit to the phenomenon under study" (p. 77). And for those who may think that in any science the quest for objectivity in the pursuit of causal relationships should be an overriding concern in that choice, quantum physics perhaps offers the most convincing arguments. In analyzing the meaning and consequences of

observation on the description of a system under investigation, Heisenberg (1930) concludes mathematically that "the partitioning of the world into observing and observed system prevents a sharp formulation of the law of cause and effect" (p. 58).

There is a tremendous amount of variance in the circumstances surrounding the act of instruction in a real-life context. When the interest is to validate a particular strategy designed to cope with exactly that variance, it should be researched in a real-life context. Knowledge about how it works and why it works is the important issue, as use of the strategy in different circumstances will have to be based on *naturalistic generalization* (Stake. 1978, 1986, 1988), rather than on the type of replication that is founded in the experimental research paradigm.

All the above considerations point to the appropriateness of a case study methodology for the purpose of the research discussed in this proposal.

CONCEPTUAL FRAMEWORK FOR THE CASE

The present study is documented around the general proposition that a relation exists between the clinical use of motivational messages in a given instructor-facilitated learning context in which adverse motivational circumstances exist and the capability of learners to overcome their motivational restraints within that context. This proposition is subsumed in

the motivational problem-solving conceptual framework provided by the ARCS model (Keller, 1984, 1987a&b)).

CHARACTERISTICS OF THE CASE

A number of characteristics of the study in question qualify it particularly as a case study. It is a case study in the sense that it is what Stake (1988) refers to as the "study of a 'bounded system', emphasizing the unity and wholeness of that system, but confining the attention to those aspects that are relevant to the research problem at the time" (p. 258). In other words, it emphasizes the search for patterns within the development of relevant sets of variables, representative of the wholeness of the case.

Its characteristics also conform to how Yin (1984) defines a case study in that it:

- "deals with operational links needed to be traced over time, rather than mere frequencies of incidence" (p. 18)
- *"is an empirical inquiry that*
 - * investigates a contemporary phenomenon within its real-life context; when
 - * the boundaries between the phenomenon and context are not clearly evident; and in which
 - * multiple sources of evidence are used" (p. 23).

RESEARCH QUESTIONS

In the present study three major research questions were explored. Each of them emphasizes different concerns: the first one that of validity of the motivational messages strategy, the second one that of explanation, and the third one that of exploration, particularly as regards optimality. There is, however, also some overlap between those questions. While case studies do not necessarily call for research propositions, they are included here as they were indeed specified prior to the data collection effort in order to enhance the directiveness of the study (Yin, 1984). They focus attention on what was to be examined, and where to look for the relevant evidence, while avoiding the temptation to simply collect everything. The propositions, therefore, were used to provide structure to the data collection process, especially to those techniques that have an open-ended character, and to the process of linking the data to the research questions in finding answers to them.

It should be noted, on the other hand, that propositions in a naturalistic research environment have a different meaning than their counterparts, hypotheses, under the rationalistic paradigm. While hypotheses are fundamentally restrictive, it is certainly not the intention that propositions should limit the scope of the study. The reason why the proposed study was formulated under the naturalistic paradigm, and why within that perspective a case study approach was selected, was exactly to be

able to investigate the phenomenon of interest in its natural, non-restrictive habitat.

In some cases, propositions presented here in relation to one particular research question, may pertain to rival explanations, or complementary views of the same phenomenon. Evidence may then be found to support only one of the explanations, excluding the other ones, or it may be found that different processes contribute to the same effect. It is once more stressed that the propositions, as stated in this section, are the ones that were formulated before the data collection and analysis effort started. They were meant to serve as basic guidelines in the development of the research. It was understood, however, that, while the case study was being pursued, yet other possible explanations might become evident, leading to an increase in the number of propositions to be addressed by the research. In allowing the research to develop beyond the initial propositions the criterion should always be to look for those pieces of evidence that represent best the "wholeness" of the case.

Taking into account the above observations, the following three basic research questions were addressed in the present study. The major one deals with the validity of the motivational messages strategy and its underlying analysis base. It is formulated as follows:

- 1) *In applying the motivational strategy under scrutiny in the given instructional context, will similar patterns of data regarding the relation between the clinical use of motivational messages and the capability of learners to cope with their motivational restraints be found as those that emerged from the previous study?*

An additional interest of the study was to explore explanatory issues, and concerns regarding optimality. Two secondary questions were formulated that presented that interest:

- 2) *How and why does the clinical use of motivational messages work?*

and

- 3) *Can it be shown that the clinical use of motivational messages is iteratively effective?*

The first research question

The first research question - *In applying the motivational strategy under scrutiny in the given instructional context, will similar patterns of data regarding the relation between the clinical use of motivational messages and the capability of learners to cope with their motivational restraints be found as those that emerged*

from the previous study? - should be placed against the background of earlier work in this field (Visser & Keller, 1989). Some evidence has been established in that study indicating that the clinical use of motivational messages can be an effective strategy to help learners in adverse motivational circumstances overcome the restraints that counteract their motivation to learn. The study presented here was set up to enhance, in an embedded multiple-case perspective, the *naturalistic generalizability* (Stake, 1988) of the earlier study's finding by *literal replication* (Yin, 1984). This led to the research proposition that

- 1.1.1 the clinical use of motivational messages in the given instructional context will be similarly effective as in the case of the previous study.

In comparing the effectiveness of the clinical use of motivational messages in the previous case and the present one it is important, as e.g. Yin (1984) emphasizes, that *whole cases* be compared, and not simply the single pieces of evidence that build towards each of the cases separately. Hence, each of the cases should first be analyzed separately, and then the question should be asked whether the complete pictures provided by each of the two cases can be explained within a single, multiple-case framework. The previous case was built around evidence regarding the results of the course in terms of achievement and attainment of course goals and deadlines;

assiduity, punctuality, and eagerness of participation in class meetings; students' dedication to working on assignments during periods in between of the class meetings; students' reactions to the motivational messages provided; quantitative and qualitative data from three end-of-course questionnaires; results of a round-table discussion at the end of the course; and various types of observational evidence. In order to make a comparison possible, similar types of evidence were therefore collected during the present study, so that the two 'pictures' could be compared on the basis of their description in similar terms.

The second research question

With regard to the second research question - *How and why does the clinical use of motivational messages work?* - different explanatory views can be developed. These can be seen as rival explanations, or as complementing each other in different ways. The effect of the clinical use of motivational messages may be on the students' behavior, on the teacher's behavior, or on the instructional environment as a whole.

Some typical propositions in line with the first point of view are that motivational messages work because of the following reasons:

- 2.1.1 they help learners assess their own progress
- 2.1.2 they remind learners of goals and intermediate goals

- 2.1.3 they allow learners to correct their own study behavior
- 2.1.4 they allow learners to interact with the instructor so as to enhance their perception of control over their own study process
- 2.1.5 they prompt learners to optimize their time-on-task
- 2.1.6 they provide satisfaction, particularly in that they help learners develop positive feelings about their accomplishments and reinforce their successes.

Propositions of the above type are based on the existing knowledge base regarding motivation as analyzed earlier in this study. Motivation to learn is a multifaceted condition. Various components contribute to it. Among these are expectancies regarding successes to be attained, as well as feelings about the value to be attached to such successes, i.e. their relevance for the learner. The perceived likelihood of their attainment depends on the amount of control a learner feels to have over the process of reaching his or her goals. All of the above factors are positively enhanced by the experience of satisfaction with achievements met. Meanwhile, a learner's effective control over his or her learning behavior is improved by improved attention to the learning tasks. Frequent and constant reminders serve that purpose.

While the above propositions are related to the research question under discussion in that they address issues pertaining to the interface

between the motivational messages and the learner, other propositions may address the interface between the motivational messages and the instructor, i.e.

- 2.2.1 motivational messages work because the process of their design and delivery helps the teacher to be more aware of the students' actual and potential problems, so that s/he can adjust the instruction accordingly, or
- 2.2.2 motivational messages work because they prompt the instructor into adopting a continuous mode of being motivational, which influences his/her in-class behavior as a motivational facilitator, such that the students basically acquire their desired disposition to learn through their immediate interaction with the instructor rather than mediationaly through the motivational messages.

Alternative, or additional explanations of the effect of motivational messages may be based on propositions that are more holistic in nature, such as the following:

- 2.3.1 students and instructor perceive themselves as being jointly involved in the creation of an overall instructional environment (consisting of such things as physical facilities, instructional resources, patterns of social interaction) and that environment

is enhanced by the incorporation of the motivational messages,
or

2.3.2 similarly as in the previous proposition, the instructional environment is enhanced, though not in a direct sense, through the incorporation of the motivational messages as such, but indirectly, through consequences of the motivational messages. This may lead to the introduction of additional components in the instructional environment, or to a change in meaning of some of the components that are already there. It may for instance mean that as a result of the messages social interaction patterns change, or that existing interaction patterns are used for other purposes. This would e.g. be the case if existing personal or professional relationships would become the basis for jointly performing learning tasks.

The exploration of the pattern of information flow between learners and instructor, and among learners, mediated by the motivational messages is of particular interest as regards the question how motivational messages work.

It should be noted that it is not assumed in this study that in every instance and for every learner motivational messages work similarly. In the

exploratory mode of inquiry due attention was therefore given to discovering the type and degree of variance that might occur across learners and events.

As stated earlier, the propositions as formulated above were not conceived from a perspective of limiting the vision of the study, but rather as a way of getting "clear about what, in the general domain, is of most interest" (Miles & Huberman, 1984, p. 35). It is a particular feature of the research approach chosen for this study that the kind of inquiry, and the specific interests addressed in it, may develop. In reporting the results of the study it will be made clear if and when this happened. In such a case the development of the inquiry should itself be looked upon as part of the research, whence it is the researcher's responsibility to document that development, to justify it, and to report on it.

The third research question

The third research question mentioned above - *Can it be shown that the clinical use of motivational messages is iteratively effective?* - was formulated with the intent to guide the search for usable evidence that addresses the *optimality* issue, as distinct from the question of *validity* (Reigeluth, 1989). That is, can it be shown, with reference to the data base collected, that the *clinical use of motivational messages* is a strategy that adjusts itself so as to maintain, or even improve, its adequacy in addressing the learners' motivational requirements?

This question naturally involves the time dimension. The term 'iteratively effective' refers to the fact that, in applying the motivational messages strategy a series of activities is performed that imply that one cycles over and over again through the same process, ascertaining the motivation of the learner. In operational terms this led to the formulation of the following proposition:

3.1.1 the intervention is continually effective over time, requiring the data base to be searched for evidence that might either confirm or disconfirm this proposition.

The optimality of the model by which the motivational messages strategy is implemented is here a matter to be looked upon from the *process* point of view, rather than from that of particular *products* created by it. This is different from the research approaches underlying the examples referred to by Reigeluth (1989). From this researcher's point of view the angle of incidence proposed by Reigeluth would be inadequate in the case of research regarding the ARCS model. Reigeluth conceives of the ARCS model as a prescriptive instructional theory, falling within what he calls the '*smorgasboard*' paradigm. In the present study the ARCS model is treated differently, i.e., as an analysis base for operational action - or perhaps rather interaction - in a problem-solving context. This means that one particular outcome of analysis may underlie an almost infinite variety of alternative

actions. The application of one such action results in feedback that is iteratively analyzed and processed to result in a wide range of subsequent alternate possibilities of motivational intervention.

UNIT OF ANALYSIS

The interaction of the clinical use of motivational messages with the capability of learners to overcome the restraints of adverse motivational circumstances present in the instructional environment is analyzed in this study at the levels of

- perceived motivational status
- perceived motivational needs
- learning behavior (process)
- instructional attainment and achievement (product),

attending to both group and individual aspects.

The unit and subunits of analysis were so defined that generalization from the case - *naturalistically* (Stake, 1988) to other applications and *analytically* (Yin, 1984) to theory, but certainly not statistically to populations - can be made fundamentally in terms of similar, but not necessarily identical technology that can be developed and used according to the same principles.

TYPE OF RESEARCH DESIGN

Yin (1984) introduces two dimensions for the classification of case study designs, i.e. *single-case vs. multiple-case*, and *holistic vs. embedded*. Combination of these two dimensions yields a matrix defining four distinct types. The research activity presented here fits into that classification scheme in the following way:

In terms of data collection, it is an embedded single-case, considering that data of the previous case were already there and that both the data of the past study and those collected for the present one reflect on diverse subunits of analysis.

In terms of data analysis, the data collected for the present study are looked upon within an embedded multiple-case perspective, which encompasses both the previous and the present study.

RATIONALE FOR THE CASE

As literal replication (Yin, 1984) is one of the aims of pairing the previous study (Visser & Keller, 1989) with the one that led to the present data collection, the rationale for the selection of the new case has been the same as that for the previous one. The present case is hence likewise a *critical* one (Yin, 1984), particularly as regards the adverseness of motivational circumstances present in the instructional environment. It was chosen so as to

allow to confirm the theoretical propositions underlying the use of the motivational strategy in question and of its analytical base in a situation where it would be difficult to attribute motivational effects to other events than the application of the motivational intervention under discussion.

SUBJECTS

It is a feature of a naturalistic study that subjects are not selected and assigned in accordance with particular experimentation requirements. The choice of subjects has rather to do with the requirement that their inclusion in the case come about naturally and that the wholeness of the case be respected. The description which follows will therefore merely detail what was known about the subjects just prior to the implementation of the study. In reporting the results of the study further detail, which could only be known following the application of data collection techniques, will be provided.

The study presented in this paper was carried out in the context of an instructional design course for the training of a variety of persons involved in tasks related to the development of materials for instruction and educational communication. They were employees of different sectors of, or pertaining to, one particular Mozambican ministry. They participated in the course for reasons of national interest, as perceived by their superiors, who had a professional interest in benefiting from their training. The employers' view in

this respect would not necessarily have to coincide with that of the participants themselves. To understand this, it should be recognized that Mozambique had an extreme shortage of human resources at the time it attained independence in 1975. To solve the problem of stagnating production and provision of necessary services, the Government had to limit severely people's personal influence on career choices. Centralized planning would determine what one could study or where one could work. Over the years this has led to a merely accepting attitude as regards possibilities offered to participate in professional training courses. Such possibilities might be seen as simply an alternative to the day-to-day routine, providing some variety, or even as an excuse not to have to do the regular tasks. Most people, particularly at the subordinate level, would not look upon such possibilities as opportunities for personal career development. The relatively limited utility of most courses offered, and particularly also the lack of recognition attributed to them by the ministry in question, would normally not encourage candidate participants to take on anything more than a neutral view of what they should expect to get out of a course.

As stated earlier, the course that served as the setting for the research effort reported on in this paper, had been requested to be carried out by one of the national directorates of the ministry in question with the particular aim to train newly admitted, inexperienced staff of an institute that was supposed

to take over tasks regarding the production of self-instructional materials from an other entity that had meanwhile been eliminated. In view of the relatively small number of targeted students for the course, other sectors had been invited to indicate participants as well. At the time when the course was ready to start the above initiatives had resulted in the expectation that employees from the following entities would participate:

- the already referred institute with future responsibilities for the production of self-instructional materials (Entity P, with 10 candidate participants)
- the national directorate that had requested the course, which had particular responsibility in the area of human resource development for the ministry concerned (Entity Q, with 2 candidate participants)
- another national directorate, which had responsibilities in developing instructional materials for adult audiences (Entity R, with 8 candidate participants)
- a National Institute involved in the production of instructional materials for teacher-led instruction (Entity S, with 5 candidate participants)
- an institute for higher training, planning to start undergraduate courses administered by distance education means (Entity T, with 4 candidate participants)

- a university department with similar intentions (Entity U, with 2 candidate participants).

Of the total of 31 candidate participants mentioned above, seven had been listed as special students who would not be required to fulfill the complete set of course requirements. These special cases included:

- two research assistants, whose presence in the course was the result of the researcher's request that they enroll and act as participant observers. They were employees of the two participating national directorates and had been authorized to carry out research assistant tasks. As to their possible participation in the course it had been made clear that one of them (Student 19) would not be available for the full period of the course due to foreign travel assignments that would interrupt his activities. The other research assistant (Student 13) was only allowed to participate in the course as far as this would not interfere with the completion of her regular tasks, which were considered, both by herself and her supervisor (himself a candidate participant, Student 12), to be demanding. It was thought unlikely that she would be able to complete the course.
- two national directors and one other person with directive responsibilities whose regular tasks did not permit them to take on the full course load. With two of them, the two national directors

(Students 12 and 20), the arrangement was that they would attend whatever course activities they could participate in, to give them the opportunity to be aware of what their subordinate staff were being trained on. The third person (Student 21) would complete only the first part of the course, an extensive theoretical introduction, and could otherwise participate in whatever other activities he wanted.

- one person (Student 27) who was already enrolled in another course, the class hours of which coincided partially with the class sessions of the instructional design course. He would have only limited time available for the course due to his regular work load in combination with the course in which he was already enrolled.
- one full-time student at an institute of higher training, who was also on the staff of Entity P (Student 10). She would have virtually no time besides her regular study load and she would never be able to attend classes of the instructional design course. She would however undertake to carry out some autonomous study tasks to be agreed upon between her and the instructor.

Appendix 2 gives an overview of student numbers and the entities to which they pertain. It will be noted three more numbers are listed than the 31 mentioned earlier. They belong to two persons (numbers 11 and 28) who had already participated in the earlier workshop conducted in 1986 and who had

requested to attend course sessions of their choosing. They had been allowed to do so, having been attributed the status of invitee. A third person (number 22) was admitted to the course after an extensive part of it had already been completed. The person in question has directive status in Entity R and was interested in being aware of what his subordinates were being trained on. He was initially admitted with observer status, but through his active participation turned himself gradually into a normal participant.

At the time the candidate participants had been proposed by the different entities not much detail was known about the various individuals listed. In general, however, it was clear that the group was extremely heterogeneous. Though all participants were professional adults, they varied greatly in initial training. Some had had university level training, either at the Bachelor (3 years after Grade 11) or Licenciado (5 years after Grade 11) level, the training of others had not gone beyond the equivalent of Grade 11). In some cases the training level was below that of Grade 11. Their training, at any of the above levels, would normally have included attention for the teaching profession. To a lesser degree they varied in instructional experience. As regards their familiarity with the area of activity focussed on in the course, the development of instructional materials, part of them had had no previous exposure whatsoever to this type of activity, while others had in fact been practicing the trade, though in ways not in line with the kind

of practice they would be confronted with during the workshop. In the rare cases where their previous training had had no relation with the teaching profession, they would have acquired some relevant experience while working in that area. Three of the candidate participants (numbers 06, 13, and 32) were non-Mozambican nationals, one of them (number 32), of Spanish speaking origin, was in the process of being naturalized. All candidate participants spoke Portuguese, a language the command of which they had acquired either as mother tongue, or as a second language.

It should be noted that the total number of candidate participants exceeded by far the number that had been indicated by the facilitator to the organizing national directorate as desirable, i.e. 15 to 20.

DATA COLLECTION METHODS

Researcher and research assistant roles

Data were collected, using a process that was similar to the one applied in the case of the previous study (Visser & Keller, 1989). However, while data collection in the previous case was entirely done by the researcher, who, at the same time, performed the role of instructor and motivational facilitator, a better separation of these roles was made in the present study. For that purpose, during the planning phase of the research, the collaboration

had been ascertained of two employees of the ministry which was envisaged to be the beneficiary of the course that would form the research setting. It had required some careful negotiations with the two supervising national directors, responsible for coordinating their work, but who at the same time were themselves prospective students of the course and therefore potential subjects of the research effort, to make sure that on the one hand adequate conditions would exist for research assistant tasks to be carried out, while on the other hand no essential detail would be revealed about the nature and specific content of the research assistants' duties. That this part of the preparations had been conducted successfully may be concluded from the following evidence. When, almost six months after the research assistants had assumed their tasks, their role was finally revealed during a graduation ceremony in which the diplomas and certificates of the course were distributed, the announcement came as a complete surprise to everyone, including the national director responsible for organizing the course and who was conducting the ceremony. He declared this to have been "the best kept secret of the course", apparently no longer remembering how he had insisted on limiting the tasks the lead researcher had wanted to attribute to one of the research assistants directly subordinated to him, considering the potential conflict that would result with her regular duties. Other participants, during a party following the graduation ceremony, referred to the research

assistants, in a good natured way, as "the spies". Through the content of the course they had been participating in they had become sufficiently aware of the importance of unobtrusive investigation not to have negative feelings about the fact that they had been "spied" upon.

The research assistant(s) were incorporated in the research effort particularly to enhance its internal validity and reliability. For that reason the research assistant(s) have been operating, after having been trained, on the basis of research protocols established during the training process, in a way independent of the lead researcher. This provided important opportunities for triangulation of, particularly, observational data. Besides, inclusion of the independent observation function has facilitated the collection of data regarding teacher behavior, considered important for the assessment of the validity of rival explanations not considered in the first study. Their work has formed an important contribution to enhancing the explanatory power of the study.

Data sources and processes of accessing them

In the process of data collection by the lead researcher, and the research assistants, multiple sources of evidence were accessed. They included the following:

- 1) Open-ended anonymous questionnaires, distributed on a regular, usually weekly, basis,
designed both to measure participants' motivational requirements with respect to future learning tasks and to determine what influenced students' motivation in relation to past learning events, including the role played by the motivational messages. The structure of these questionnaires has been discussed earlier in this paper (pages 22 and 23). An example is provided in Appendix 1. The last questionnaire of this type used during the course requested the students not to refer in their responses solely to the events of the week preceding it, but also to the course as a whole.
- 2) Three end-of-course anonymous (or non-anonymous but unobtrusive) questionnaires.
 - a) The first of these questionnaires asked the participants to rate on a 5-point scale the perceived importance of each of 16 components of the instructional strategy of the course. Among these components, the use of the motivational messages is mentioned specifically, as well as related components like the provision of feedback by the facilitator (basically by means of the motivational messages) and the participants' providing feedback to the facilitator through the weekly questionnaires.

It should be noted that, while specific mention was made of the use of the motivational messages in this questionnaire, this was done using a terminology which would not reveal the intended nature of the messages. They were simply indicated by the variety of names used by the students themselves to refer to them, i.e. "bilhetinhos" (little notes), "cartões" (cards), and "correio" (mail). The meaning of each of the five possible grades that could be attributed to the importance of an instructional strategy component was clarified in an introduction to the questionnaire and repeated at the beginning of each page. Besides rating the perceived importance of the various instructional strategy components, the respondents were also encouraged to comment on each of them, as well as on the instructional strategy as a whole. This questionnaire was distributed to the students six days before the last class session and returned by them to the facilitator/researcher in blank envelopes. Appendix 3 shows the questionnaire referred to above. Care had been taken to arrange the various instructional strategy components randomly, leaving the motivational messages more or less in the middle.

- b) The second end-of-course questionnaire was hidden in an exercise. During the week preceding the last class session students had been given the following home work assignment. Considerable attention had been attributed during the course to matters related to the development of an appropriate instructional strategy, including the question of media selection and use. As an exercise in this area they were asked to think about what had been the use of media in the course they had been participating in, and how appropriate these media had been both from an *instructional* and a *motivational* point of view. It should be noted in this context that, besides instructional design technology, motivation and motivational design had been specifically dealt with during the course. Students were told, and given a list of, what particular media to consider. Among the list of nine media, the "little notes" were mentioned in the sixth place. Besides, related media, like the facilitator, a Gantt chart, and a contract signed at the beginning of the course, were mentioned as well. During the last class session for which the students had prepared themselves through the given homework, students presented the result of their thinking, filling out a worksheet requesting them to rate on a

5-point scale, equal to the one referred to under 2.a above, both the instructional and motivational importance of each of the nine media listed and to justify their responses, leaving them with a full blank page for additional comments about individual media or about the media-mix as a whole. Appendix 4 shows this instrument.

- c) In the third end-of-course questionnaire, administered anonymously during the last class session, participants were asked to list the five most important things they had learned during the course. Appendix 5 shows this instrument.
- 3) An open-ended discussion about the course during the last class session.

This was the equivalent of the round-table discussion conducted during the final session of the 1986 course (Visser & Keller, 1989). In the case of the present study the format had to be changed for practical reasons. The group was too big for a fruitful round-table discussion, and acoustic conditions would have made it difficult to record in a way that would not have hampered the free flow of exchange of thoughts. A two-step process was applied, whereby first small groups discussed among themselves, after which the groups were invited to report and discuss the results of their

internal deliberations. The latter part was taped. Subjects were encouraged to comment on any aspect of the course. Two outside international consultants (from Brazil and Portugal) with training experience of similar Mozambican audiences were invited to be present in the session and were later discretely debriefed by the researcher in order to establish validity of the procedure applied.

- 4a) Registration by the researcher of spontaneous and solicited remarks made by students of the course, as well as by other individuals interacting with the course environment. In order to aid memory, without at the same time sacrificing unobtrusiveness, such remarks were sometimes discretely recorded on magnetic tape.
- 4b) Registration by the research assistants, who, independently from the lead researcher, contributed to the same data base component, of spontaneous and solicited remarks made by students of the course, as well as by other individuals interacting with the course environment.
- 5a) Recording by the researcher of immediate, observable effects of particular messages.

Messages at times suggested that certain things be done by the students (e.g. contact a colleague, or get in touch with the facilitator), or they could introduce a new word or expression, not normally used by the students, in the course environment, or they

could provide some kind of advice regarding ways to tackle a particular problem. In those cases it was possible to observe behaviors, that would not normally have been emitted, that were in line with the content of the motivational messages.

- 5b) Independent recording by the research assistants of immediate, observable effects of particular messages.
- 6a) Observations, made by the researcher, regarding how participants reacted to the medium as such.

Some typical things to look for were: Would they read the messages? Would they throw them away after having read them? If they kept them, would they treat them with the same care as they would the more traditional instructional materials? Would they show to be looking forward to any following messages? Would they be seen discussing the messages with their colleagues?

- 6b) Independent observations, made by the research assistants, regarding how the participants reacted to the medium as such.
- 7) Instructional outcome of the course, both in terms of attainment and achievement.

Compliance with set deadlines could be checked against a Gantt chart defining, among other things, due dates. Achievement could be measured on a criterion-referenced basis (Visser, 1988b).

8) Interviews with participants before and after the course.

All candidate participants were interviewed in the period preceding the course, and after they had received a brochure about the course.

During these pre-instructional interviews their awareness of specific detail regarding the aims of the course and ways to reach these aims was checked. Their disposition regarding the course, as well as their availability for classes, home work, and other foreseen course commitments was assessed. The results of these interviews are laid down in the researcher's field notes.

At the end of the course a selection of students participated in post-instructional structured interviews, the nature and content of which are detailed in Appendix 6. These interviews were taped, while parallel handwritten notes, made by the researcher during the interview, are also included in the data base.

9) Besides the above data sources, which relate more specifically to student behavior, though not solely, other sources were tapped that would allow inspection of the teacher behavior. For that purpose, audio tape recordings were made of all class sessions, and the research assistants were instructed to record relevant teacher behavior as regards what was done to motivate the students in class.

PROCEDURE

During an introductory session participants were told that they would be required to participate in activities aimed at constantly improving the quality of the instruction they were receiving. On appropriate occasions afterwards the same information was communicated to them in different forms, particularly through the introductory statements to the weekly questionnaires. As part of that effort they would have to fill out questionnaires and interact with the instructor regarding their study behavior. During the same introductory session they were asked to sign a contract indicating their willingness to cooperate with all the course procedures (including the above one) and their understanding of the demands made on them by participating in the course. They were not made aware that the information they would be providing would be used concurrently for formal research purposes, nor that the course they were participating in was part of a research effort.

The weekly questionnaires were distributed, completed, and collected in a way that would allow participants to convince themselves that anonymity of their responses was ensured. They were regularly given feedback on the results of the overall analysis of the questionnaires, and changes in instructional strategy decisions derived from the analysis results were discussed with them during class sessions. This was done not only for

obvious pedagogical purposes, but also to make clear to the participants that their frequent contributions to the process of data collection were indeed being used for the stated purpose of course improvement.

The three end-of-course questionnaires, as well as the open-ended discussion during the last class session, were handled in a similar fashion, the stated purpose of their use being the improvement of the course should it be offered to future audiences.

The researcher was concurrently performing the role of instructor in the teaching-learning environment in which the motivational intervention was being applied. This allowed him to operate as *participant-observer*, in the sense defined and paradigmatically grounded in the vast literature on ethnographic research (e.g. Denzin, 1983; Dobbert, 1982; Goetz & LeCompte, 1984; House, 1983; Sanday, 1983). It is to be noted in this respect that this approach to observation, while totally alien to the assumptions underlying the rationalistic paradigm, is an essential ingredient of the naturalistic paradigm, and particularly important as regards the naturalistic generalizability of the study. In order not to reveal his role as participant-observer, the instructor refrained from ways of recording his observations in the presence of the participants whose motivational behavior was being studied that could not be interpreted as a natural part of the course procedures.

Similarly, also the other forms of interaction between the researcher and the course participants mentioned above, were conducted such that they were understandable and interpretable to the students from the perspective of the student-teacher relationship.

In order to address concerns regarding internal validity of the study, provisions were made that all collected data remain accessible and verifiable. All decisions were documented and included in the established data base. Class sessions were recorded on audio-tape, and so were all major organized discussions that were not naturally part of the planned class meetings.

As mentioned before, prior to implementing the research the collaboration of two research assistants had been obtained, who participated in the study by independently making observations and collecting data that could be triangulated with the lead researcher's observations and data. While obviously inclusion of this research function increased the threats to unobtrusiveness, efforts were made to reduce these threats through training and by having the research assistants play roles that were understandable to the course participants from other perspectives than those related to the research objective. Under this provision, the threats to unobtrusiveness were largely outweighed by the gains in internal validity and reliability that resulted from the enhanced possibilities for triangulation.

Inclusion of research assistants' findings in the data base has resulted from a process of briefing (training) sessions, conducted during a period of one month prior to the beginning of the course, and subsequent research debriefings held, usually at weekly intervals, starting the moment when the course started, which continued until well after the course had formally ended.

Training of the research assistants was centered around their study of the research proposal, and methodological literature by Yin (1984), Jorgensen (1989), and Pfaffenberger (1988), as well as literature regarding the ARCS model (Keller, 1987c). Besides, through interaction with the lead researcher, the research assistants acquainted themselves, during the training period, with the nature of the course/workshop that would form the setting for the application of the motivational messages strategy. Possible motivational problems that were expected to occur in that context were also discussed. By reading the lead researcher's field notes regarding the pre-instructional interviews made with the candidate participants, as well as through direct contact with some of them, in those cases where this was possible without calling attention to their specific research role, they made their initial entry into the field. An important aspect of the training phase was furthermore the decision making regarding how the research assistants would operate in the field. In view of their regular work commitments, as well as arrangements

made with their supervisors, it could not be automatically expected that they would take on the role of regular students of the course. Yet, after studying the methodological literature, both research assistants decided that this would give them the most favorable entry into the field. The question was left open whether they would be able to continue in this role until the end, or whether research interests might require the type of their involvement to change in the course of time. Reports of the various briefing sessions are included in the data base.

During their briefing the research assistants were particularly made aware that any kind of findings regarding the motivational messages would be of interest to the study, whether they would support the research propositions or contradict them. In that context it was explicitly clarified that, even though the earlier study had produced evidence in support of the effectiveness of the motivational messages strategy, it would be as interesting to conclude that this time the motivational messages did not work as it would be to find that they did. Both conclusions would be of value for future developmental work in motivational design, the former one particularly as it could provide indications regarding the limits to the effectiveness of the strategy under scrutiny.

The weekly research debriefings that followed the training period generally followed the model of initial reporting by both research assistants of

their individual findings, interpretative discussion of these findings on the basis of the pre-established research propositions, discussion of possible alternative interpretations, possible re-interpretation of past conclusions in the light of the expanding data base, and planning and preparation of follow-up activities. All research debriefings were recorded on magnetic tape and have as such been included in the data base. Type written reports based on these recordings are included in the data base as well.

At the conclusion of their assignment, the research assistants produced, at their initiative, an independent report, describing their involvement in the research effort, analyzing their findings, and discussing a number of their conclusions about the effectiveness of the motivational messages strategy. This report, which is included in the data base, resulted from a number of work sessions between the two research assistants. An intermediate product (also included in the data base) was presented to the lead researcher for his appreciation and discussed with him during a taped work session. Further discussion between the research assistants led to a final version which was presented to the lead researcher at his departure from Mozambique. According to correspondence with one of the research assistants, their discussion is continuing and they may still present an additional conclusion. The independent character of this report is particularly relevant as regards the analysis of the role played by the

facilitator in the instructional setting where the motivational messages were being applied.

DATA ANALYSIS

Most of data sources mentioned earlier in the section on data collection methods have been included in the present study based on the consideration that tapping similar data sources had contributed to elucidating the research questions posed in the previous study. They were redefined and extended taking into account the additional research concerns of the present study. The referred similarity of data sources between the two studies will facilitate comparing the two cases within an embedded multiple-case perspective. While the various data sources could be expected to contribute all to answering the three research questions, they were not expected to be equally important for each of the questions, and some data sources might not contribute anything at all to elucidating a particular question or part of it.

On the basis of the previous study, as well as expectations based on the design of the present one, particular attention will be given in analyzing the results of the present study to the following assumed relations between the three research questions and evidence resulting from the various data sources, designated here by the numbers used in the section on data collection methods:

QUESTION 1

Data Sources 1, 2, 3, 4a, 5a, 6a, 7 to be used to analyze the extent to which the clinical use of motivational messages is similarly effective in the proposed case as in the previous case.

Data Sources 4b, 5b, 6b, 8, 9 to be used additionally, particularly for corroboratory purposes.

QUESTION 2

First set of propositions
(interface between
motivational messages
and learners)

Data Sources 1, 2a+b [open-ended part], 2c, 3, 4a, 4b, 5a, 5b, 8 to be used for explanation building.

Data Source 9 to be used additionally for corroboration.

Second set of
propositions
(interface between
motivational messages
and teacher)

Data Sources 1, 2a+b [both structured and open-ended parts], 2c, 3, 4a, 4b, 8, and particularly 9 to be used for explanation building.

Third set of
propositions
(holistic view of
instructional
environment including
motivational messages)

Data Sources 1, 2a+b [open-ended part], 2c, 3, 4a, 4b, 5a, 5b, 6a, 6b, 8, 9 to be used for explanation building.

QUESTION 3 Data Sources 1, 2a+b [particularly open-ended part], 3, 4a, 4b, 5a, 5b, 6a, 6b, 7, 8, 9 to be used for assessment of continuous effectiveness of motivational strategy over time and adaptability to changing circumstances.

The way these data sources will be used in order to find answers to the research questions will vary depending on the nature of these questions and their research purposes - validation, explanation, or exploration.

Analyzing the evidence related to the first research question, which deals with the comparison between the effectiveness of the motivational messages strategy in the proposed case and in the previous case (Visser & Keller, 1989), will take into account the way the first case was analyzed, so that both cases can be described in terms that are commensurate, and comparison of the two cases can be made on the basis of pattern-matching (Yin, 1984). The following types of analyses will therefore be performed on the data related to the first research question:

- A content analysis (e.g. Fetterman, 1989) will be made of the responses to the weekly open-ended questionnaires (Data Source 1), as well as of the

responses to the open-ended sections of the end-of-course questionnaires 2a, 2b, and 2c, and of the open-ended discussion held at the end of the course (Data Source 3). A similar treatment can be given to the post-instructional structured interviews (Data Source 8). The frequency with which direct mention is made in these responses of the motivational messages, or with which reference is made to their content, or to matters that may be inferentially related to the content of the messages, can be counted and tabulated according to their relative importance as attributed by the respondent, similarly to what was done in the analysis of the previous case.

- Ratings of the perceived importance of the various instructional strategy components, including those related to the motivational messages (Data Source 2a), and similarly of the various instructional media (Data Source 2b), can be used to assess numerically, in terms of means and frequency distribution, the role played by the motivational messages, the same way as was done for the previous case.
- Students' remarks (Data Sources 4a and 4b), observable effects of messages (Data Sources 5a and 5b), and students' reactions to the medium (Data Sources 6a and 6b) can be analyzed for occurring tendencies and patterns (over time and across learners).

- Instructional outcome of the course (Data Source 7) can be analyzed in terms of statistical indicators related to student achievement, as well as in terms of compliance with deadlines defined on a Gantt chart.
- The research assistants' final report (Data Source 9) can be analyzed particularly with a view to establishing the degree of convergence between findings regarding the second case that were collected from different angles.

The analyses as described above lead into a synthetic description providing the broad picture within which the various details referred to above can be integrated. That description will also include relevant qualitative detail from the various data sources with due reference to the established data base.

Based on this description, and the one that resulted from the analysis of the previous case (Visser & Keller, 1989), a comparison of the two cases can be made in terms of a general framework that can account for convergence as well as inconsistency and possible contradiction both between and within the two cases (Mathison, 1988).

The second research question is of particular importance from the point of view of explanation-building (Yin, 1984). Content analysis is therefore called for of spontaneous and solicited information provided by the students and of observations recorded by the lead researcher and the research

assistants. This will be done with due reference to the relevant portions of the data base, particularly as regards the data sources expected to provide information that can be brought to bear on the three sets of propositions mentioned before. Potentially, there are different possible explanations for the way in which the clinical use of motivational messages may or may not affect the learner's motivational behavior. Three different views have been identified earlier in this paper in the section on research questions. Each of these views gives rise to a different set of propositions. Convergence, consistency, and contradiction of the collected data as regards these propositions can be explored as a means to assess rivalry and complementarity of propositions. Yin (1984) emphasizes in this connection the "iterative nature of explanation-building" (p. 108). In building towards the explanation one goes through a series of successive steps in which the comparison of findings with initial propositions may lead to revising the propositions and consequently comparing further details of the case against the revised propositions, repeating this process as many times as necessary.

The third research question calls for time-series analysis (Yin, 1984) of relevant information provided by the various data sources addressing that question. The exploration of both quantitative data, e.g. those regarding timely completion of learning tasks and achievement obtained (Data Source 7) and qualitative data from interviews, questionnaires, and

observations (Data Sources 1, 2a+b, 3, 4a, 4b, 5a, 5b, 6a, 6b, 8, and 9) is of importance as regards the search for patterns over time which can be looked upon in the light of the proposition of continuous effectiveness of the motivational messages strategy. Important deviations from continuity of overall motivation or learning results, that cannot be related to discontinuities in the application of the motivational strategy, are indications that the proposition cannot be supported. On the other hand, possible relations between changes in the application of the motivational strategy and observed effects on motivational indicators of learner behavior support the proposition.

Finally, while analysis is an important process in linking specific questions to particular answers supported by data, the case would lose one of its most important aspects, its "wholeness", if the effort of carefully looking into the details described above were not carried out from the perspective of "embedding the empirical data at hand with a holistic understanding of the specific situation and general background knowledge" (Mathison, 1988, p. 17) about the phenomena being studied.

VALIDITY AND RELIABILITY

Besides what has already been said before regarding validity and reliability, the following matters can still be added.

The ways of data collection discussed earlier have been chosen such that multiple sources of evidence can be tapped. This is intended to broaden the range of issues that define the case in the sense of representing its "wholeness". It also enhances the possibility of finding *convergence* among different lines of inquiry, providing opportunities for the triangulation of different pieces of evidence. Yin (1984) emphasizes the importance of application of this principle in order to turn a study more convincing and accurate through corroboration. Mathison (1988) enhances the concept of triangulation by including in it the concern for holistic explanation of the totality of lines of evidence, be they converging, inconsistent, or contradictory. The use of multiple sources of evidence also enhances construct validity, considering the multiplicity of aspects covered by using different data sources.

During the implementation phase of the study, a complete data base was established, detailing the evidence collected by using the different means mentioned earlier. Data analysis and reporting of the results in this study is based on this data base, which may also serve the interest of follow-up investigations. This data base consists of an organized set of field notes (hard copy and on diskette, and occasionally handwritten, due to hardware failure while operating in the field) and related evidence registered on audio tape and by photographic means. It also includes a full collection of documents,

particularly those related to the instructional context in which the clinical use of motivational messages was applied, and those that document the motivational strategy itself, i.e. the motivational messages, completed questionnaires, and recorded discussions. Where applicable, tabularized information has also been included in the data base, as has any kind of relevant narrative evidence and contextual documentation. Yin (1984) stresses the importance of the establishment of such a data base, particularly as a means for enhancing case study reliability.

The issue of external validity is addressed by the replication logic inherent in the multiple-case perspective in which the present study is incorporated.

Internal validity is particularly addressed at the level of data analysis. The existence of a well organized data base is of great importance in that respect. Besides, the procedures used for maintaining a chain of evidence, based on explanation building, and the analysis of patterns of evidence over time, are of fundamental importance in that respect.

SCOPE OF THE STUDY

The study presented in this paper is not intended to provide the "definite" answer to the question whether the ARCS model, or the clinical use of motivational messages are useful tools independently of the context of

their application. For reasons delineated earlier, such a question is considered to be inappropriate, and would therefore result in "Type III" error (Kirk & Miller, 1986). The study is, however, conceived so as to contribute substantively to the *understanding* of the problems of motivation and their systematic solution, as well as to expansion of the basis on which researchers, working according to either of the major paradigms, can build for the purpose of furthering knowledge in this area.

RESULTS AND DISCUSSION - PART I:

THE PROCESS

WHAT KIND OF RESULTS?

The previous chapter on method represents the state of affairs at the moment the research was about to be carried out. Research concerns had been defined, questions formulated, propositions defined, and ways devised to gather information that might substantiate or insubstantiate them. What has been described in the previous chapters is therefore along fundamental lines coincident with the research proposal that preceded the study.

In writing up and discussing the results, one of the researcher's concerns should be to argue that indeed what has been done is what was initially proposed to be done, and to show how the data thus obtained contribute to the advancement of knowledge in the area defined by the research questions formulated.

A case study takes place in a living reality. Unlike his or her role in a study under the rationalistic paradigm, the researcher should interfere as little as possible with that reality. Quite to the contrary, he or she should become part of that reality, and, having become integrated in it, describe it from within. Such a description, should be not in terms of unchanging givens, but should specifically attend to the real-life aspects of the case, i.e. to the dynamics of change inherent in it. In other words, the result of the study is not a product, in the sense of a set of givens describing a finished

experience, but rather the description of a process, of something that happens over time, and in relation to which it is particularly important how and why things happen.

In the present chapter I shall therefore first of all describe what actually happened in order to provide insight into the extent to which the reality of the case did or did not correspond with what was envisaged at the planning stage. Doing so is also a requirement in the interest of the naturalistic generalizability of the study. Applying the conclusions to which this study will lead is not a simple matter of mechanically copying a procedure with a group of students whose objective characteristics such as age, ethnicity, gender, SES, and level of previous training are similar to those of the subjects who participated in the present study. Instead it means finding a way, perhaps in entirely different material and human circumstances, to rediscover the dynamics of the cases analyzed in this study and then to go beyond it. What can be learned from this study requires a true process of learning, i.e. it requires more than just accessing, selecting, coding, storing, and retrieving information, but also, and particularly so, processing and reprocessing that information in the context of other real-life experiences, and going beyond the immediately given.

After this first chapter under the general heading of results and discussion, three more chapters under the same heading will follow, each of them specifically attending to one of the three fundamental research questions originally formulated. A final chapter, providing conclusions and recommendations, will then reintegrate the findings related to the specific questions within the broader view of the totality of the case, and that of the multiple-case perspective in which it is embedded.

The remaining part of the present chapter will discuss the dynamics of establishing the data base, on the analysis of which the next three chapters are based. That issue is a wider one than the mere process of collecting and organizing the data. It will also be described here how the researcher gained entrée into the field, what was done to facilitate the research assistants' work as participant observers, what procedures were used to turn the observations of the research team into integrated parts of the data base, and how the researcher left the field.

THE PROCESS OF COLLECTING DATA

Though in the method section of this study extensive attention has been paid to aspects related to the data collection process, the issue is taken up in the present section again. This is a matter of principle, considering that under the naturalistic paradigm reality may lead the research to develop differently from what had been planned. A description of the dynamics of what actually happened as a consequence of applying the planned methodology should therefore be considered part of the results of the study.

After his arrival in the field, the researcher accepted the opportunity offered to him to incorporate his conducting the workshop on systematic design of instructional materials, originally proposed by the ministry concerned for the staff of only one particular institute, Entity P, in a wider context. Entity P had been created almost two years earlier to take over the tasks of a department of another institute the researcher had been consulting with in the area of instructional development. Circumstances surrounding the establishment of Entity P, as well as subsequent lack of proper management, had left Entity P inoperational. Recently, both the management and the staff had been changed, leaving behind only two staff members of the previous team. The new management and staff were considered by the ministry as totally inexperienced in the area of their responsibility and

therefore unprepared for their tasks. This preconception of the ministry was later found to be correct.

In view of the above situation, the researcher was asked by the ministry to serve as a consultant to the new institute, not only for the purpose of training its staff as originally proposed, but also in the wider sense, and for a longer period of time, to assist the management in organizational matters and in implementing operational procedures. This offer was accepted for the following research related reasons:

- The larger consultancy would start more than a month earlier than the initial date of the training component alone. It would therefore bring the researcher into contact with his subjects long before the beginning of the instructional intervention that would serve as the setting for the research. This would allow him to get a better view of the entry conditions of the students, particularly as regards their dynamic aspects.
- Working with the institute within a wider perspective would allow him to acquire insight into contextual factors surrounding the planned course that would otherwise have remained unrevealed.
- Having an operational base within one of the organizational entities of the ministry would facilitate and enhance his contacts with the other entities which had been offered the opportunity to suggest additional candidates for the course.

- Starting to work with the subjects of the study at an earlier stage would facilitate gaining entrée into the field. The necessary base of mutual confidence and of being at ease with each other could be created before the start of the course.
- During the implementation of the course a better view could be obtained of its impact in the work situation.
- The period of two months following the planned termination of the instructional intervention would allow looking at transfer from the learning environment to implementation in the day-to-day work environment. It would also make it possible to follow up on cases in which students would not complete their assignments in time.

These advantages were felt to outweigh the disadvantages of a higher degree of complexity and heavier work load related to having to perform now three concurrent roles: those of researcher, trainer, and management consultant. The research setting had become more natural than it was ever hoped it could have been. Even the inclusion of participants from the other entities - initially a research interest to ensure there would be a large enough number of participants - could now easily be linked to development interests of Entity P, which it had become the professional responsibility of the researcher in his role as management consultant to take at heart.

Gaining entrée into the field had become a smooth process. An extensive part of the data base established for this study (see Appendix 7) documents the process (Data Base Items 1.4.1.001, 3.2.3.003 to 3.2.3.006, 4.2.7.001 to 4.2.7.003, 5.2.1.001 to 5.2.1.061, 5.2.2.001 to 5.2.2.003, and 5.2.3.001 to 5.2.3.005). The process involved getting familiar with the candidate participants proposed for the course, particularly those who constituted Entity P, the sector for which the course had been requested and which showed the greatest similarity with the setting of the previously studied case, that of a similar course in systematic design of instructional materials given in a single institute in 1986 (Visser & Keller, 1989). It also involved getting familiar with the institutional environment in which participants were working. Getting familiar with the larger societal context, as part of that same process, was no longer a necessity. Prior to his carrying out the research, the researcher had lived, and been professionally active, for more than twelve years in Mozambique. The vast contextual knowledge resulting from that experience is an obvious advantage. However, any preconceptions resulting from it should be corroborated, confronting them with those of the other actors involved in the case. Discussions with future students, as well as with ministerial and funding agency authorities involved, and, where possible, with outside consultants, were frequently taken advantage of for that

purpose. They have been reported on in the data base, particularly in items 5.2.1.001 to 5.2.1.061 and 5.2.2.001 to 5.2.2.002.

Besides the above mentioned aspects, gaining entrée into the field also meant for the researcher to get to know himself within a new work environment. This aspect was particularly important because of his previous consultancy experience in the area of interest of Entity P. Grave conflict (Data Base Item 3.2.3.004) had surrounded the establishment and development of Entity P at a time the researcher's principal contacts had been with the side that was at the losing end (Data Base Item 3.2.4.001). He had personally witnessed the wastefulness of that process, which had resulted in the loss of valuable experience and human resource potential, as well as in tragedy (e.g. Data Base Item (3.2.5.003). Getting to terms with emotions that otherwise might have interfered with his ability as a data gathering instrument (Data Base Item 5.2.3.009) was an important part of his gaining entrée into the field.

Finally, gaining entrée into the field also meant preparing the way for the two research assistants to enter that field and to be able to operate within it. It also meant establishing ways of communication among the lead researcher and his assistants, and between the research assistants themselves, that would ensure that data obtained through the intermediary of the research assistants would become part of the data base and that the research team would continually be processing and reprocessing these data in the light

of the defined and developing research interests (Jorgensen, 1989). In part this involved organizational tasks, i.e. negotiating with the ministerial authorities concerned the amount of participation that could be expected of the research assistants, making sure at the same time that the process of conducting such negotiations, and of obtaining the required authorization, would not interfere with the research assistants' future abilities to operate unobtrusively. That this was successfully accomplished has been explained earlier in the *method* chapter of this study under *data collection methods: researcher and research assistant roles*. In the same chapter under *procedure* it has been explained how training prepared the research assistants for their tasks. Data Base Items 5.2.4.001 to 5.2.4.003 document this process in more detail. Establishing effective communications with and among the component parts of the research team involved discussing and reaching agreement about tasks and ways to carry out these tasks, ensuring the continued existence of common frames of reference, and agreeing on procedures for regular contact. Most of all it meant establishing a team spirit, i.e. awareness of common purpose, preparedness to share experiences, appreciation for the other party's point of view, and an equally critical attitude towards one's own contributions as to those of the other members of the team. Establishing such a team spirit was facilitated by the choice of research assistants, which had been determined, besides practical considerations such as the likelihood that

employer authorization for the participation would be obtained, by previous experience of working with and knowing each other. One of them had participated in an earlier study together with the lead researcher (Visser, Constantino, Uamusse, and Armando, 1988) and had known the researcher also as the instructor of another course in which he had participated, the other research assistant had known the lead researcher from the learning side of a student-teacher relationship as well as at a personal level. Both research assistants knew each other through work in the same professional setting before becoming part of the research team. Data Base Items 1.2.1.001 to 1.2.1.013, and 1.2.2.001, as well as 4.2.8.001 and 4.2.8.002, provide evidence that the desired team spirit, as defined above, was successfully established.

After this introductory phase, the research team has basically followed the methodology of data collection delineated in the *method* chapter of this study, with the following exceptions.

A certain 'questionnaire fatigue' was becoming evident towards the end of the course, exactly there where a heavy concentration of questionnaires had been planned to occur. It was therefore decided to use the last motivational status questionnaire (Data Source 1; Appendix 1; Data Base Item 2.2.7.013) not only for its intended purpose, but concurrently to assess the students' perception of how positive and negative motivational factors had influenced their behavior during the course as a whole. Information

from this questionnaire, which was administered one week before the last class session, was synthesized and fed into the evaluative end-of-course discussion on the last day of classes (Data Base Item 1.1.2.022).

Besides the data sources specified in the *method* chapter, some important other opportunities to collect data were introduced while the research effort was under way. As part on the course in systematic design in instructional materials the topic of motivation was taught as well. This had not been originally programmed and the topic had not been taught in the previous case, the course conducted in 1986 (Visser & Keller, 1989). However, the lack of attention to motivation beyond the level of pre-instructional activities in the main instructional text used by the students (Dick & Carey, 1978, 1985), was felt as a shortcoming both by the students and the instructor. It was therefore decided to dedicate time to the discussion of this issue during two different sessions. At the same time, instruction in this area was taken advantage of to prompt the students to express themselves about motivational aspects of the course they were participating in, using structured small group and plenary discussion (Data Base Item 2.2.2.018) and a worksheet exercise followed by class reporting (Data Base Item 2.2.2.020).

Despite their limited availability, the research assistants had decided to participate in the course, submitting themselves to the full range of

requirements that also applied to the regular students. This gave them the opportunity to assess the effect of the motivational messages not only on their colleagues but also on themselves and on each other. Their findings in this respect are included in their independent report (Data Base Items 5.2.5.002 and 1.2.2.001). They are particularly interesting as their initial attitude had been one of skepticism, or, as expressed in their own words: "nothing positive would come to their mind about this matter [the motivational messages] except that it had to do with a somewhat ridiculous or even impossible idea" (Data Base Item 5.2.5.002, p.3).

Though conceptually research and teaching continued to be well separated interests all through the course, at an operational level the two areas became gradually more integrated. Pursuing the research aims was found to contribute to improving the instructor's teaching effectiveness, particularly in his role as motivational facilitator. On the other hand, pursuing the instructional objectives of the course helped further the research interests. Because of the operational interconnectedness of research and instructional aims it has been possible to apply the various research techniques and instruments in a way that was completely natural, from the point of view of the participants, in the context of the instruction. Unobtrusiveness of the research could therefore be maintained all through the course. The double role of the research assistants was revealed only after

the course was over and came as a complete surprise (Data Base Item 1.4.2.003). The motivational intention of the motivational messages was never made explicit to the participating students. They continued to be referred to by them as "little notes", "mail", or "cards" (e.g. Data Base Items 1.4.2.001, 1.4.2.003, and 1.3.1.001 to 1.3.1.010), names that were subsequently adopted by the research team to communicate about the messages with the target audience.

As a result of the process described above, a data base has been established which will serve to substantiate or insubstantiate the propositions formulated in connection with the three research questions. In the next section the content of that data base will be described in summary fashion.

THE DATA BASE

The data base is probably the most tangible result of the research effort. With its several thousands of pages of hard copy of notes and documents, and a range of diskettes and magnetic tape cassettes, it is certainly the heaviest and bulkiest part of it. In it, the process, as referred to above, is documented in its most complete form.

In this, and the following chapters, frequent reference is made to particular content of the data base. A detailed description of the data base is

given in Appendix 7, specifying briefly the content of each item. A summary of that description will follow here.

Even though the motivational strategy under investigation was applied within the context of a planned instructional intervention with a duration of slightly less than three months (89-04-28 to 89-07-18, see Appendix 8 for further detail), the data base itself covers more than twice that period. It starts on 89-03-20, the first day that marked the researcher's attempt at gaining entrée into the field, and ends on 89-09-25, the day of the researcher's departure from the field, the last notes having been written on the outward bound plane.

While information contained in the data base is available for inspection and to serve the purpose of further research in this area, access to it is contingent upon the user's acceptance of the obligation that confidentiality and anonymity be preserved. Persons and institutions are referred to by their proper names. The inclusion of audio recordings, photographic documentation, and written circumstantial documentation would have neutralized any effort to try and hide in other documents the identity of individuals and organizational entities involved.

The data base contains written documents, audio recordings, and photographic materials. All audio recordings except one (Data Base Item 1.5.2.001) are in Portuguese, the official language of Mozambique. The

researcher's field diary is in English, with quotations sometimes in Portuguese. Most other written documents are in Portuguese. Exceptions are the main instructional text (Dick & Carey, 1978) for most of the students, which was in Spanish, and the main instructional text for a minority of students (Dick & Carey, 1985), which was in English. One of the additional handouts (Data Base Item 2.2.2.006) was also in Spanish. Occasionally, elements of the motivational communication process with one of the students, and also research assistant, were conducted in English (e.g. Data Base Item 2.2.1.074) and Dutch (e.g. Data Base Item 2.2.1.117), her second major language and mother tongue, respectively. Also some parts of the circumstantial documentation (Division 3 of the data base) are in English.

The major part of the data base concerns the workshop in systematic design of instructional materials carried out in 1989, referred to in the data base as the ESMI-2 case (the logo *ESMI* represents the initial letters of Systematic Design of Instructional Materials when translated into Portuguese). A less extensive part of the data base concerns the previous workshop (Visser & Keller, 1989), which was conducted in 1986, referred to as the ESMI-1 case. The two cases have been studied from the perspective of different types of interest. In the ESMI-1 case the balance between development and research interests was clearly on the side of development. The motivational messages strategy did not yet exist when that workshop

started and came into being while the course was being conducted. In the ESMI-2 case there was a definite research interest. The strategy was available at the start of the workshop as a possible alternative to deal with motivational problems of students. The question was: Will it work again? And if it works, how does it work? And if or when it does not work, what are the factors that determine its ineffectiveness? The better defined research perspective in the ESMI-2 case has resulted in a larger amount of information collected about that case. Though the overview of the data base presented in Appendix 7 does list the ESMI-1 documentation available, the specification is less detailed than for the ESMI-2 case, considering that the ESMI-1 case has already been analyzed and its results presented.

The data base is organized in divisions, segments, and items. Items are classified according to areas of research interest they pertain to. Their classification number identifies the area of interest, but does not provide adequate clues as regards where to find the document. For this purpose, section numbers and classification categories have been introduced as well. Using the section classification, documents can be located within their category according to their numerical order.

The following five divisions exist in the data base:

- 1) audio recordings (category AR, with 76 items divided over 50 sections for the ESMI-2 case)

- 2) course related written documentation (category CR, with 219 items divided over 219 sections for the ESMI-2 case)
- 3) circumstantial documentation (category CD, with 66 items divided over 66 sections for the ESMI-2 case)
- 4) photographic documentation (category PD, with 189 items divided over 8 sections for the ESMI-2 case)
- 5) researcher and research assistants' field notes (category FN, with 300 items, divided over 5 sections for the ESMI-2 case).

Class sessions were recorded as a matter of course, after in the initial session it had been explained to the participants that a continuous attempt was being made at improving the quality of the instruction and that, in order to do so, it was necessary to register what was happening so that it could be analyzed. As students knew they would soon be applying similar techniques themselves as part of their course assignments, they readily accepted this. The equipment with which the recordings were made was so small that it could hardly be noticed (see e.g. 4.2.1.014). There is no evidence that it ever stood in the way of a free flowing communication. Post-instructional structured interviews with students were recorded with their explicit consent. To that effect they signed the statement at the top of the interview form (Appendix 6).

On occasion recordings were made in a discrete manner. This would happen in unforeseen circumstances, when spontaneous reactions could be registered, and asking permission would almost certainly have interrupted the spontaneity of the occasion. Such recordings were basically made to aid memory. Not making them, as is recommended by some authors (e.g. Fetterman, 1989), would possibly have resulted in the availability of the same data, but they would have been less accurate, and claims as to their trustworthiness would have had only limited validity. It should be understood, however, that the technique was never used - and should in the opinion of this researcher never be used - deceptively. I am in complete agreement with Fetterman that a deceptive use of whatever technique would undermine not only the basis of trust that should exist between the researcher and his subjects, but that it could also severely damage the ethnographic research environment as a whole, thereby hindering future research efforts.

With the exception of the first three sessions, all subsequent research debriefings were recorded (e.g. Data Base Item 4.2.8.002). These recordings served as input for the lead researcher's field notes, but were also used by the research assistants for their own independent reporting. They themselves applied the same technique when preparing their independent report (Data Base Items 1.2.2.001 and 5.2.5.002).

Division 2 of the data base contains all written documentation pertaining to two courses. For the ESMI-1 case the available documentation is described in the form of a summary overview. The available ESMI-2 documentation is given in full detail in Appendix 7. The most important and most extensive segment of it is the one that details what happened over time in terms of motivational communication. This segment contains 132 items. A total of 100 motivational messages, specifically designed and delivered as such, are included among them. A short description of each of these messages is given in the overview of the data base in Appendix 7. Appendix 9 shows a small collection from among these 100 messages. The process turned out to be more complex, however, than that of one-way traffic between the instructor and his students. After some time, and particularly towards the end, some students, including the research assistants, started to feel the urge to communicate back. This reciprocity in motivational communication has also been documented in the data base and Appendix 9.

The second segment of the division on course related documentation details the instructional materials to which the students were being exposed. This segment is helpful in the process of relating motivation to instruction. All documents in this division have been filed in chronological order. Their section numbers reflect this chronology. Using this feature it can readily be concluded, for instance, that exposure to the instructional materials referred

to under item numbers 2.2.2.015 and 2.2.2.016 (section numbers CR108 and CR109, respectively) was followed by motivational message MM-44, referred to under item number 2.2.1.054 (section number CR111).

Other important documentation in this segment relates to the concurrent use of instructional processes to unobtrusively collect information from the students about their perception of motivational aspects of the course they were participating in. In discussing motivation as an area with relevance for the process of systematic instructional design, the course procedures themselves were often taken as an example for critical analysis, either at the suggestion of the facilitator or at the initiative of the students. Valuable, and valid, information was thus obtained. Some instructional materials (e.g. Data Base Items 2.2.2.014, 2.2.2.018, 2.2.2.020, 2.2.2.025) were specifically designed to prompt students to react in a way that could be used for both instructional and research purposes.

Segments 3 and 4 contain information related to the planning of the course and about administrative aspects. These documents have been included in the interest of completeness of the information contained in the data base.

Segments 5 and 6 relate to the evaluation of the students' performance in the course. In Segment 5 the various tests and a procedure for peer assessment of student participation are presented. Segment 6 provides detail

regarding evaluation of the students using the products that resulted from their efforts.

Segment 7 of the division on course related documentation relates to the various explicit efforts to find out what was going on, particularly at the motivational level, in the course setting. This segment contains all questionnaires to which students responded as well as the responses given. It also contains documentation that was used as an input or prompt to evaluative discussion with the students or to interviewing them in a structured manner. Notes taken during the interviews are also included, but are not as rich in information as the audio recordings made (Data Base Items 1.3.1.001 to 1.3.1.010). As mentioned earlier, part of the information pertaining to this area of research interest is included among the instructional materials (Segment 2), as it was collected in the framework of a process that was explicitly presented to the students as an instructional one, its research objectives having been hidden.

Correspondence, referred to in Segment 8 of this division, was conducted with Entity S in preparation for a debriefing of this institute, an excessively large proportion of the staff of which had left the course for reasons that required to be clarified.

Segment 9 contains documents of a general nature that could be used for multiple purposes, i.e. predesigned forms for motivational

communication that could be used for on the spot reaction to instances where a motivational input seemed to be appropriate.

Division 3 of the data base includes documentation that allows insight in the circumstances - immediate, institutional, and societal - surrounding the course in which the motivational strategy under investigation was applied. Included are periodical media contributions reporting on events, books and other more extensive publications looking at events in perspective, reports by consultants other than the researcher, the researcher's own reporting, as well as documents of a more incidental nature. Besides providing insight into the circumstances as (part of) an objective world surrounding the course setting, the same documentation also indicates what was brought to the participants mind by the, naturally, limited processes of information diffusion. The selection reflects what people were talking about explicitly or what they showed to be on their minds by other parts of their behavior.

Pictures being worth a thousand words, Division 4 of the data base is in fact crammed with information. It supplements and complements details that can be derived from information contained in other divisions of the data base. Besides the lead researcher and one of his assistants, outside photographers have been involved in documenting some of the events of the ESMI-2 case photographically. A total of 193 photographs resulted from that effort, the majority of them in color. The ESMI-1 case was photographically

covered by the researcher and two of his students, resulting in 49 color photographs.

The images referred to above relate to events in the following areas of interest:

- instructor-driven course proceedings
- student-driven or student-initiated course proceedings
- supplementary work sessions, conducted after the course was formally closed, to benefit students who were still working on assignments
- post-instructional course evaluation procedures
- graduation procedures
- information entered on the marker board during sessions
- the physical environment at one of the entities participating in the course and changes in that environment
- the psycho-social environment interacting with the course and the motivational strategy operated within its context
- course-related communicational aspects of the environment
- research debriefings
- course preparation and follow-up.

It should be mentioned here that one of the photographs, a group picture taken during the inaugural session (Data Base Item 4.2.1.024), was also used, following a suggestion by one of the research assistants (student

13) already before the course started, for motivational purposes (MM-26, Data Base Item 2.2.1.031). Some of the photographs showed great utility as well during research debriefings to identify persons and events, particularly in the early phases, when the research assistants were not yet entirely familiar with all the individuals from entities other than their own, participating in the course. The prompt processing of the photographic documentation about the inaugural session by the audio-visual production department of one of the participating entities was an essential contribution in that respect to facilitating the research discussions.

The final part of the data base, Division 5, contains the lead researcher's and the research assistants' field notes, consisting of the field diary kept by the researcher, with 260 entries, covering the period from the first day of entering the field to the day of departure, notes related to the larger consultancy the researcher had agreed to take on at the request of the Mozambican authorities, a series of the researcher's personal letters written while the research was being implemented, notes related to training of the research assistants and the research debriefings, and the research assistants' independent report. This division of the data base provides much of the cement that makes the other pieces stick together, providing structural strength and organization.

RESEARCH DEBRIEFINGS

In discussing the process nature of the results of this study, it is justified to dedicate some specific attention to the role of the research debriefings (Data Base Items 1.2.1.001 to 1.2.1.013, 1.2.2.001, 4.2.8.001 to 4.2.8.002, and 5.2.4.004 to 5.2.4.019) in that process. They served various purposes.

In the first place the research debriefings were the basic means by which data collected by the research assistants could become part of the data base, particularly after the debriefing sessions started to be taped, which originally had not been planned. The decision to do so was actually made after it had become clear how important these meetings were becoming for all members of the research team.

They also provided for the continuous review of what was entering into the data base. Possible interpretations used as working hypotheses in earlier discussions could later be revisited and looked upon against the light of new evidence.

They served the important purpose of corroboration of information collected from different angles. Putting the pieces together made each piece of information more complete and could lead to the elimination of inconsistency with the total picture the research team was looking at.

Discussing the facts of what each one had observed could often lead to clarification of what indeed were facts and what should be seen as interpretation of facts. The process of constantly making corrections of the emerging picture was an important means of enhancing the construct validity.

Often also the research debriefings resulted in the preparation of future action. Specific tasks were sometimes attributed to one member of the team because of his or her particular facility in getting access to the source of information envisaged.

Finally, the research debriefings were an important means for all members of the team to cope with the stress that was the natural result of the high degree of emotional involvement that is required to get access to information regarding what motivates and demotivates a large number of human beings in a setting in which the researchers were themselves participating with responsibilities different from those that resulted from the research commitment alone. Apart from the above, stress was also bound to result from the excessive work load that constituted combining the research activities with full teaching/learning responsibilities on top of what in normal circumstances would already have filled a regular 42-hours-a-week work schedule.

As stated, the research debriefings were the channel *par excellence* through which data collected by the research assistants could enter into the data base. Particular attention in that connection deserves the research assistants' initiative, taken at the end of the research effort, to produce an independent research report (Data Base Item 5.2.5.002) under the title: *The motivational/demotivational influence of the messages*. The conclusions drawn in this report are presented in translation in Appendix 10. The incorporation of this report in the data base is particularly important as it represents a viewpoint independent of that of the researcher, who combined his research interests with those of instructor - and for that matter motivational facilitator - of the course. This specific product of the research assistants' work contributes therefore to enhancing the validity of the study.

The research assistants participated in the study in the role of participant observers on the students' side. Having assumed that role it was necessary for them either to act as if they were real students or to accept to be real students. Despite the extra work load that was expected to result from that decision, both research assistants preferred to be considered full students of the course. It was made clear to them, however, that their first priority was with the research, and that they should feel no obligation to complete the course. On the other hand, having chosen to be considered ordinary students, they would be submitted to the treatment of the motivational

messages, just like everyone else. One of the research assistants has indeed completed, with considerable personal sacrifice, but also with very good results, the whole course. The other research assistant has not completed all course assignments, but has continued to participate in all other regular and supplementary course activities until the end. The decision to discontinue work on his instructional design project was taken on the basis of joint analysis by the lead researcher and the research assistant in question (e.g. Data Base Items 5.2..214 , 5.2.1.216, and 5.2.1.219) of his regular tasks within Entity R, as well as his research commitments, in combination with what continued work on the instructional design project would have implied. Continued work on the design project would probably have resulted in diminished attention for the research tasks and, most likely, in not meeting the requirements related to his regular tasks. This might in turn have resulted in conflict with the National Director in charge of Entity R, to whom the research assistant was primarily responsible, which could have had severe consequences for the research. Unobtrusiveness of the research assistant's movements in the course environment was not affected by the above decision, particularly as it was made at a moment when many other participants were experiencing difficulties in meeting deadlines. Besides, individual students' progress in the course was never publicly discussed, and

participants would therefore not know to what extent their colleagues were meeting their course obligations.

LEAVING THE FIELD

In concluding this chapter about the process that constituted the results of the study, a few words should be said about its ultimate phase, the departure from the field.

Leaving the field could be a fairly natural process, owing to the fact that entering the field had been a natural process. For the environment in which the researcher had been operating during a period of six months, he had been there for a clearly defined purpose, not related to his research interests. That purpose had been made clear to the participants of Entity P, the prime target audience of the instructional intervention, by the National Director overseeing its operations. It had been clear from the beginning that the consultancy would be for a limited period of time. When that period finally came to an end, it was a surprise for no one. Leaving the field could have simply remained restricted to writing the final report (Data Base Items 3.2.4.002 and 3.2.4.003), buying a ticket, and actually leaving.

Two aspects, however, required special attention. The first one was that it was found that the application of the motivational messages strategy had indeed been effective (e.g. Data Base Item 5.2.5.002). Besides their

immediate effect on enhancing the effectiveness of the instruction, their influence had been much wider (see e.g. Appendix 10, particularly conclusions 4 and 8). Changes had taken place in the human environment of the entities participating in the course. Withdrawal of the treatment that had provoked these changes, could have adverse effects. An effort was therefore made to ensure that winding down the operations of the researcher would be accompanied by the taking over of his tasks by others. Planned sessions to discuss and promote implementation of what had been learned (Data Base Items 1.4.2.002, 1.4.2.004, 2.2.1.090, 2.2.1.095, 2.2.1.110, 2.2.1.124, 2.2.2.026, and 2.2.2.027) were used simultaneously to encourage this takeover of the course facilitator's initiative by the students. As a result, a group was formed by the students, and at their initiative, whose principal task it is to promote the continuation of the dynamics installed in the environment where the course had taken place (Data Base Item 1.4.2.004). This group had had its first meeting already before the researcher had left the field. According to information received by telephone from one of the research assistants, who was elected member of the group, work was still actively continuing more than a month later, students meeting voluntarily on a weekly basis after hours, in the prevailing circumstances in Mozambique a rare demonstration of dedication and interest.

A second aspect that needed attention on leaving the field was the role played by the research assistants. In their interest, and in that of the remaining members of the audience, their position had to be normalized. As mentioned earlier, the graduation ceremony was taken advantage of for this purpose. On that occasion (Data Base Item 1.4.2.003), students were informed that two of their colleagues, besides having been students, had also performed an additional role in carrying out research tasks related to the course. The two research assistants were requested to identify themselves - as usual they could be found at opposite ends of the room to facilitate their making observations from different positions - and they were congratulated with their effort. Though the announcement came as a great surprise, the fact that those two students had performed the research tasks in question was fully accepted by the audience. Also the incorporation of one of the research assistants in the group, mentioned earlier, that was formed to ensure continuity of the initiative, can be seen as a sign that no ill feelings had resulted from the unobtrusive way the research had been carried out.

For the lead researcher himself, departure from the field was felt in retrospect as a painful experience, perhaps comparable to the loss of relationship that accompanies divorce or death. With work going on until and including the day of his departure, there had been little time to prepare himself emotionally for that event. It is characteristic for the social

environment that had meanwhile emerged around the course, that his students should have foreseen the feelings he would only later discover himself, as expressed in the following caricature presented to him two days before his departure.



Figure 4. The researcher leaving the field, as seen by his students.

RESULTS AND DISCUSSION - PART II:

QUESTION 1: THE VALIDITY ISSUE

BASIS OF THE ANALYSIS

In the present chapter the data base will be analyzed with a view to addressing the first research question formulated for this study: *In applying the motivational messages strategy in the given instructional context, will similar patterns of data regarding the relation between the clinical use of motivational messages and the capability of learners to cope with their motivational restraints be found as those that emerged from the previous study?* As indicated earlier in the *method* chapter, this question will be analyzed particularly in relation to information which has entered the data base from Data Sources 1, 2, 3, 4a, 5a, 6a, and 7, i.e. the weekly questionnaires used to assess the students' motivational status, the three end-of-course questionnaires, the open-ended evaluative discussion held at the end of the course, observations made by students and other individuals interacting with the course environment, the observed effects of the motivational messages on student behavior, the appreciation shown by the students for the medium of motivational messages as such, and the instructional outcome of the course. Additionally, information become available from Data Sources 4b, 5b, 6b, 8, and 9 will also be used, i.e. the research assistants' input on the data base as regards comments made by students and other individuals, behavioral effects, and

attitudinal effects, as well as information from pre- and post-instructional interviewing, and data regarding teacher behavior. The latter sources mentioned here as additional ones are not classified as such because of any presumed lesser importance, but rather because they had not been used in connection with the previous study (Visser & Keller, 1989). In a comparison of the two cases it will therefore be necessary to look in the first place at those elements that were the same.

THE STUDENT POPULATION

A list of students who participated in the ESMI-2 course/workshop is presented in Appendix 2. As explained under *subjects* in the *method* chapter, 32 of the 34 names mentioned in the list of Appendix 2 correspond to students who did actually participate.

The last two names mentioned, those pertaining to Entity U, had been presented as candidates before the course started, but they never turned up, not even for the inaugural session. After it had become clear that those two students would no longer attempt to participate, entity U was debriefed in order to find out what had happened (Data Base Item 1.3.2.001 and 5.2.1.225). The discussion was held with the director of Entity U, herself one of the proposed students. Their failure to participate was claimed by Entity U to be

entirely attributable to deficient planning on their side and was explicitly stated to have nothing to do with the process and quality of communication that had preceded the beginning of the course. The two students foreseen to participate had been chosen, not properly taking into account their other responsibilities. This had resulted in their unavailability at the time the inaugural session was held, because of its coinciding with important duties at the central level of the larger body of which Entity U is a part. The same happened on the occasions following the inaugural session. According to the information received during the debriefing, the two students had maintained their interest and intention to participate, every time again thinking they would make it next time, until they realized it had become too late. Interest in the course continued to exist, and it was hoped that on future occasions it would still be possible for Entity U to acquire the skills taught in the workshop, as they badly needed them.

Besides the two students referred to above, one student was admitted with special status, though she would never be able to attend classes. She would simply work on individual assignments, only partly coinciding with the regular ones.

Except the three students mentioned above, all other 31 started to participate at the moment the inaugural session was held, a group more than twice as large as the one that had attended the ESMI-1 workshop in 1986.

Apart from their number, there were also other differences. In the case of the 1986 workshop students were not categorized according to their status (regular or non-regular students). Had this been done, using the same criteria as those that were applied in the ESMI-2 case, 2 of the then 15 students should have been classified as special students. One of them had demanding directive tasks, the priority of which could not be altered by his obligations as regards completing course assignments or class participation. The other one was a student whose foreign travel on official mission had been scheduled long before the course was announced. He would have to leave half-way the course, with the intention to work on assignments away from the course environment. In terms of percentages that means that 87 % of the students of the 1986 ESMI-1 course were regular students, where as 13 % should have been classified as special students, who would not be expected to meet the regular course requirements or might not even continue till the end.

For the ESMI-2 course, held in 1989, the picture looked different. Of the 32 students mentioned earlier 22 were admitted as regular students, 8 were special students, one of which having been admitted originally as an observer, starting to attend classes after a considerable part of the workshop was already over, and 2 were invitees. One of the special students was the one mentioned earlier who would not be able to participate in the class sessions. Comparison between the ESMI-1 and the ESMI-2 case should take into account only the

categories of regular students and special students who attended or could attend on a more or less regular basis the normal class sessions. This leaves out the invitees, who were both former students of the ESMI-1 workshop, who for particular, individually different, interests wanted to have the opportunity to participate in course activities of their choosing, as well as the special student who did not attend classes. This means that, for the comparison with the ESMI-1 workshop, 29 students, almost double the ESMI-1 contingent, should be taken into consideration, 22 of which (76 %) were regular students, and 7 of which (24 %) were special students. The reason of their special status has been pointed out earlier in the *method* chapter under *subjects*.

As in the case of the previous study, personal data regarding the participating subjects were collected, using a questionnaire that was filled out by the students during the inaugural session. Below follows an analysis of these data . To facilitate comparison, the equivalent data from the ESMI-1 study (Visser & Keller, 1989) are given as well.

Age	ESMI-2:	M = 31.2 yrs. S.D. = 7.2 yrs.
	(N = 29)	Bimodal distribution, with most participants in the age group between 25 and 30 years.
	ESMI-1:	M = 31.3 yrs. S.D. = 7.0 yrs.
	(N = 15)	Positively skewed distribution.
Gender	ESMI-2:	19 male (66 %), 10 female (34 %)
	(N = 29)	
	ESMI-1:	9 male (60 %), 6 female (40 %)
	(N = 15)	
Years of professional schooling (including university level training)	ESMI-2:	M = 4.1 yrs. S.D. = 2.0 yrs.
	(N = 29)	Bimodal distribution, with almost equal groups having up to 3 years or between 4 and 7 years of training.
	ESMI-1:	M = 4.1 yrs. S.D. = 2.4 yrs.
	(N = 15)	Positively skewed distribution.

The majority of the ESMI-1 participants had been trained as lower secondary or elementary school teachers. In the ESMI-2 case this holds true for slightly over half of the participants. The other half has been trained at a higher level, generally in fields related to teaching.

University degrees	ESMI-2: (N = 29)	7 hold equivalency of a Bachelor degree. 7 hold a <i>Licenciatura</i> , a degree obtained after 5 years of university training, following Grade 11.
	ESMI-1: (N = 15)	4 hold equivalency of a Bachelor degree. 1 holds a <i>Licenciatura</i> .
Content specializations	ESMI-2:	Widely varied.
	ESMI-1:	Equally widely varied.
Linguistic background	ESMI-2: (N = 29)	4 have Portuguese, the official language, as a mother tongue. 2 grew up bilingually, with Portuguese as one of the two languages spoken at home. 20 had one of the local languages as a mother tongue. 1 grew up with a Creole language, 1 with Dutch, and 1 with Spanish.
	ESMI-1: (N = 15)	Half with Portuguese, the other half with a non-Portuguese mother tongue, including one with Spanish.

Demographic background	ESMI-2: (N = 29)	10 from rural background, 6 from small provincial towns, 13 with urban background.
	ESMI-1: (N = 15)	Two thirds rural or semi-rural, one third urban.
Citizenship	ESMI-2: (N = 29)	26 Mozambican, 3 foreign: 1 Portuguese, 1 Netherlands, 1 Mexican, being naturalized.
	ESMI-1: (N = 15)	All Mozambican, one having been naturalized.
Number of years since last training where performance standards had to be reached	ESMI-2: (N = 29)	3 more than ten years, 3 between five and ten years, 14 between two and five years, 9 less than two years.
	ESMI-1: (N = 15)	3 more than ten years, 3 between five and ten years, 9 between two and five years.

SITUATION

A description of what was expected to be the situation surrounding the students' proposed candidature for participation in the course has been given in the *method* chapter under *subjects*. That description is largely upheld by what later was found to constitute reality. What follows here therefore merely expands on the previously developed perspective.

Most of the candidates for the ESMI-2 workshop showed an initial positive attitude towards their proposed participation, which had, as stated earlier, normally not been a result of their own initiative (see Data Base Items 5.2.1.022/24/26-28/30/42-45/48/50/51/53/54/56/58-60/74 and 2.2.7.001). This aspect was similar to what was found to be the case when the ESMI-1 workshop started. There were, however, some differences, both in quality and quantity. Responses to the student personal information questionnaire (Data Base Item 2.2.7.001), as regards the student's interest in participating in the course, were generally less specific in the ESMI-2 case (6 students did not even respond to the item in question) than in the ESMI-1 case. Besides, some students, particularly those pertaining to Entity S, showed explicit signs of lack of interest, or doubt as to the usefulness of the course, and even possible resistance (Data Base Items 5.2.1.022 and 5.2.1.044).

Contrary to what was the case in the ESMI-1 workshop, the students participating in the ESMI-2 workshop did not constitute a single group. They

came from five different organizational entities, physically separated from each other. In some cases, particularly in Entity T, students did not even know their colleagues working in the same entity. The different entities had, or claimed to have, different status, ranging from that of an institution for higher education to that of a department producing instruction at the literacy level. Difference in status combined with real or presumed difference in competency, as well as in passed achievements in learning, which ranged from approximately the equivalent of Grade 9 to that of five years of university training. All the factors, combined with the much larger number of students, should lead to the expectation that it would be considerably more difficult to get the ESMI-2 group of students to engage in cooperative learning, than it had been in the ESMI-1 case.

In comparing the ESMI-1 with the ESMI-2 case, major attention should be given to Entity P, the institute for which the course had been specifically requested and planned, like in the case of the single institute that was the beneficiary of the ESMI-1 intervention. Each of the other entities was in principle an add-on to what anyhow would be going to happen in implementing the ESMI-2 workshop for Entity P. However, in making the comparison between ESMI-2 at Entity P and ESMI-1, it should also be kept in mind that the conditions at Entity P were considerably inferior to those at the institute where the ESMI-1 workshop was implemented. None of the Entity P

staff had prior experience in work related to the content matter of the workshop. Besides, the staff was entirely new and had found itself to be working in an environment born out of severe, unresolved, conflict (Data Base Items 3.2.3.004, 3.2.4.001, 3.2.5.003, and numerous items dispersed all through the researcher's field diary, 5.2.1.001/260). Students were very much aware of strange things that had happened before they arrived and at the moment when they arrived, almost all previous staff having been dismissed in the same meeting in which they themselves were being introduced to Entity P. "I very much wondered", says one student, and: "There was a lot of confusion in my head" (Data Base Item 5.2.1.053), when she tells about her experience of starting to work at Entity P. At a higher level there is recognition that the wrong decisions were taken as regards Entity P, but the existing power structure prevents them from being reverted (e.g. Data Base Items 5.2.1.226 and 5.2.1.234).

One staff member of Entity P was participating under particularly difficult circumstances in the ESMI-2 workshop. He had received no salary from the ministry for a period of three years (Data Base Items 3.2.5.001 and 5.2.1.051) for his regular work as a teacher. He survived by teaching night classes and selling his possessions. He had been placed at Entity P in an attempt to break the bureaucratic deadlock over a situation of conflict to which

he may have contributed himself, consciously or unconsciously, and solve his problem. The attempt would prove to be unsuccessful.

Extensive parts of the data base, particularly Division 3, *circumstantial documentation*, document the general societal and institutional situation surrounding the ESMI-2 course. The confrontation with brutal violence, either directly or indirectly, is an almost daily phenomenon. It affects students, just like everyone else, in their mindset, but also in practical terms. One student (see Data Base Item 5.2.1.095) sees the instructor before class. He is worried, he explains. There has been an attack in the Moamba area, some 50 miles from Maputo. He has relatives living there, including a sister, and he has no information about whether they have succeeded to escape. He says he would have liked to go there and find out immediately. Yet he stays, and helps preparing the conference room for the class session. Another student (Data Base Item 5.2.1.120, and related items) waits for the instructor to hand in an assignment and to explain why he has been absent in a previous session and why he probably will not attend the next session. His mother, and other relatives, in Inhambane have just been attacked by the Armed Bandits for the third time in a row. An uncle was killed, and his sister's two children, who were in the care of that uncle, are now alone. The responsibility has passed on to him, but he is alone in attending to the problem.

Meanwhile, profound changes were taking place in society in the framework of the implementation of the Program for Economic Reconstruction. What only a few years back had been considered totally inappropriate for discussion, had now become official government policy (see e.g. Data Base Items 3.2.1.029 and 3.2.1.044). In the past, many people, particularly those working in education, including many of the students of the ESMI-2 course, had made, or had been required to make, considerable sacrifices in terms of personal and career development. Under the new policy, such sacrifices had little chance of being recognized. The major benefits of the political changes taking place could be seen to go to those who were in power. Awareness was growing that, from now on, one should take one's life in one's own hands. However, an ideology guiding people in doing so, was still lacking. People were living in an ideological vacuum (Data Base Item 1.2.1.013). A new game was starting to be played, but most players were still unaware of what exactly the rules are they, and their opponents, will have to adhere to. "People are still willing to make sacrifices", one student says (Data Base Items 1.5.1.003 and 5.2.1.211), "but often their sacrifices are not taken the full advantage of". And he continues, explaining that in colonial times people would simply do everything, doing it mechanically, but that now they would no longer do that. "They now compare it with what they see in other countries."

The inadequate use of people's sacrifices, the lack of recognition for what they are doing, the forfeit even of what is intellectually or emotionally theirs, is what hurts people most. In numerous conversations, the account of which can be found dispersed all through the researcher's field diary, the issue is touched upon by the subjects involved in the study. Such concerns could be voiced at any level of responsibility, though subordinate staff would not normally take the initiative to discuss them in the presence of their superiors, or even interrupt such a discussion (e.g. Data Base Item 1.1.3.007) if it had to be continued in the presence of one of their bosses who had initially not been there.

Besides the turmoil present in society at large, the ministry of which the five participating entities are a part, was going through a process of change as well. A new minister had recently been appointed, replacing the one that had symbolized the ideological change the Government had tried to introduce after independence, which was now gradually, or perhaps not so gradually, being abandoned. However, as said earlier, the ideological changes taking place were not yet accompanied by a change of the rules of the game, as can be deduced, e.g., from an interview with the minister in question (Data Base Item 3.2.1.025). While some are able to take a critical attitude towards positions assumed by those in power (e.g. Data Base Item 1.5.1.003), others conclude,

like the student cited earlier (Data Base Item 5.2.1.053), that they are just wondering, and that a lot of confusion is entering into their heads.

The problem referred to above is still aggravated by the fact that part of the previously existing power structure has not been affected by the nomination of a new minister, and frequent doubts are expressed - at all levels - as to where the real decisions are being made. At times such doubts approach the conviction that, in fact, the decisions are not made at the level where they should be made (see e.g. Data Base Items 5.2.1.210, 5.2.1.226, and 5.2.1.234).

As a consequence of the overall change of Government policy taking place, organizational changes were being implemented as well at the ministry. This could affect complete directorates or institutions, as well as individuals. Though there was consensus about the need that things should change at the ministry, which was considered to be over-bureaucratized, frequent dissatisfaction was expressed with the way change was being implemented. Decisions appeared to be made autocratically by basically one person, not even involving the highest level of management (e.g. Data Base Items 1.5.1.006 and 5.2.1.245). What was happening produced great insecurity among employees of the ministry. Particularly towards the end of the ESMI-2 course it was not at all clear to a number of them, particularly those pertaining to Entities R and S, whether they would be able to apply what they were learning

in a setting related to the one they were part of now. The fact that, despite promises made, and publicly communicated, on no occasion the Minister or Vice-Minister would show their interest for the learning effort students were engaging in, sent a message to the participants that there were few warranties that their sacrifices would be taken advantage of.

COMPARISON OF GROUPS AND SETTINGS

Comparing the above description of the student population and the situation in which the treatment of the motivational messages was administered to it for the ESMI-2 case with the picture available about the ESMI-1 case (Visser & Keller, 1989), the following conclusions pertain:

- In general terms the two groups can be seen as similar. With respect to characteristics of age, years of professional schooling, variety of nationalities, and range of subject specializations, the two groups are strikingly the same.
- As to a series of specific characteristics the two groups can be differentiated. The second group had a higher number of graduates from the higher education subsystem, who had generally obtained higher degrees. Consequently the proportion of people trained to teach at the lower secondary or elementary school level was lower than in the ESMI-1 case. It should be borne in mind, however, that these two aspects varied

greatly across subgroups: among the 9 regular participants of Entity P, there was only 1 university graduate (11 %, against 33 % in the ESMI-1 case), 3 out of 9 participants of Entity R (33 %) held a university degree, 4 out of 5 participants of Entity S (80 %), and all participants of Entities Q and T had received university training. Besides these differences, a greater proportion of the ESMI-2 group came from an urban background. On the other hand, their great majority did not have Portuguese as a mother tongue. This was a considerable problem, as can be judged from much of the materials produced by the students (Data Base Items 2.2.6.003 and 2.2.6.004). In the ESMI-2 case there was also a somewhat smaller gap with previous learning experience in which performance standards had to be reached, than in the ESMI-1 case.

- The settings within which the two workshops were taught that served as a basis for the application of the motivational messages strategy were similar in that they both included many aspects constituting motivational restraints for the participating students, a large number of which were identical. However, the degree to which these aspects were demotivating was generally different, making it less likely that students would be able to cope with their motivational restraints in the ESMI-2 case. Besides, circumstances related to the profound ideological changes taking place in society, were not yet an issue in 1986, the year in which the ESMI-1

workshop was conducted, but they were very much a strong background factor in 1989, when the ESMI-2 course took place. Similarly, people lived less consciously with the continuous presence of violence in 1986, than they did in 1989. On the other hand, longer term prospects for economic development looked better in 1989 than they did in 1986, however as yet without affecting very much the immediate concerns of most of the people participating in the course.

THE VALIDITY ISSUE: Do motivational messages work?

Proposition 1.1.1: *The clinical use of motivational messages is similarly effective in the two cases studied*

The previous study (Visser & Keller, 1989) concludes that "both on the basis of observation, and as substantiated by report and self-report, the motivational intervention is considered to have been successful" (p. 34). A similar conclusion can be drawn for the present study, providing enhanced validity in the embedded multiple-case perspective of the two cases. On the following pages, evidence will be presented to substantiate the proposition, associated with the first research question, that the use of the messages was similarly effective in the case of the previous study and that of the present one. The above analysis of student population and circumstances will be used as

an interpretative framework in selecting the evidence from the data base and attributing meaning to it.

Effectiveness of the messages will be looked upon from the point of view of two sets of indicators, each constituting a major section of the remaining part of this chapter. The first set of indicators is related to the instructional outcome, i.e. to the question whether students learned what they were supposed to learn, and whether they did so within time limits that were in accordance with the circumstances under which they performed the learning tasks.

The second major section is related to a series of indicators of motivational outcome. Motivational effects on both learners and instructor will be discussed in this context, considering a variety of data sources.

An intermediate conclusion will be presented to close the chapter.

THE VALIDITY ISSUE: The instructional perspective

In this section the instructional outcome of the ESMI-2 workshop will be analyzed. Various entities participated in the course. Students pertaining to these different entities usually participated in the workshop in circumstances that varied in important ways across entities. What happened with these students after they entered the course will therefore be discussed per entity. First the students' completing or not completing the course, and the

degree to which success or failure characterized the result of their participation, will be analyzed. Following that, attention will also be paid to efficiency aspects, particularly as regards the students' time management behavior.

Instructional outcome

The instructional outcome of the ESMI-2 course was satisfactory. Of the prime beneficiary of the course, Entity P, eight of the nine participating regular students made it to the end, i.e. they completed all course assignments. Six of them passed the criterion, and therefore received the diploma, whereas two students reached the finish with insufficient results, so that a diploma could not be issued to them. Instead they received a certificate of participation.

The only special student of Entity P was indeed a very special one. She could not attend any of the class sessions, and was part of the time away on school vacation. Yet, and despite her full study schedule at the institute of which she was a student, as well as her expected participation in some of the regular activities at Entity P, she worked herself through part of the theoretical portion of the course, on which she was tested, having reached a satisfactory result. She also participated in open sessions when they were held at moments when she was free, and in follow-up meetings of the staff of Entity

P. She was also present at the various social events organized in the framework of the workshop, including the graduation ceremony of her colleagues.

Something similar holds true for the invitee of Entity P. She participated in a considerable portion of the course procedures, as well as the related events, helping her colleagues, advising them on the work they were doing for their assignments. She took the initiative to work on a special project, for which she received guidance from the facilitator, the result of which could later be integrated in adopted work procedures for Entity P. Toward the end of the workshop, she also vigorously pursued the interest that the experience would not die, and was elected a member of the group, mentioned earlier, created to ensure that what was learned in the course would continue to be put into practice and developed further. One of the participants in the course added the name of this student to those listed on the questionnaire for peer assessment of student participation, observing that "despite her having been an invitee, her presence had been important" (Data Base Item 2.2.5.010).

The student who did not make it to the end was the one, referred to before, who started to participate in the course in exceptionally difficult circumstances, not having received his pay for three years, and, while the course was running, not seeing his problem being solved. He lived far away,

and just to go to one class and return home, making use of the existing, non-legalized, transport system - the only one that would work in his case - cost him more than one percent of what would have been his monthly pay. And he was supposed to attend class sessions twice weekly, as well as to be interacting regularly with the facilitator and his colleagues, and to get himself organized for the design project, which would involve making contact with educational institutions. Despite these serious difficulties, aggravated later by disease, he did participate in the beginning, and wrote two of the three tests, with astonishingly good result, placing himself among the top third of the students. Socially he had a tendency to remain apart, which looks natural for someone who does not seem to get societal approval for his actions, but he did interact with the facilitator and a few of his colleagues with whom he had a closer relationship. Numerous entries in the researcher's field diary refer to this case, and it was frequently discussed during the research debriefings. When this student finally no longer appeared, he would normally be late, because of his transport problems, it was not just because he himself had finally decided that the situation in which he had found himself for so long, was no longer acceptable. It was rather pressure from his family, a considerable force within the context of the local culture, that prohibited him from continuing to work for a ministry that would not show recognition for his effort. Under this pressure he had abandoned the service, and therefore

the course as well (Data Base Item 1.5.1.004). Considering the difficulties that surrounded his participation, it should be considered strange that he did indeed participate to the extent he did. The fact that during that time he did interact, despite his otherwise isolationist behavior, with the facilitator, may be an indication that the process of motivational communication prompted him to do so, and prompted him to fulfill the obligations about which he had entered into agreement with the facilitator that he would meet them.

As to the other entities that participated in the ESMI-2 workshop, the following instructional outcome was obtained. Of the 20 remaining students under consideration, seven of whom with special status, the large majority completed the part they had undertaken to complete. All special students, who were under no obligation to do so, participated to the maximum of their availability in the course procedures, and sometimes seemed to be even more fully participating than some of the regular students. They were also active in participating in related events of a social, instructional, or professional nature. One of them, the research assistant referred to before, was discouraged by the researcher to continue to work on his final course assignment for the reasons already explained. Another special student fell ill long before the end of the course. Though she would no longer attend to her directive tasks, under medical obligation, she would still continue to work on her course assignments and interact with the facilitator and various colleagues of the

course. Advice from the facilitator that she should primarily attend to her health, met with the response that work in the context of the ESMI workshop was benefiting her mentally and physically. As her situation seemed to be a psychosomatic reaction to the autocratically imposed changes taking place at the ministry, it is indeed possible that her judgment was correct as to the benefits of her working on the assignments. She was finally sent on sick leave abroad for a period of one month. Before she left, she made arrangements to be able to complete her assignments after her return in the absence of the facilitator. Her achievements have already earned her the certificate of participation. After she finishes her project work, she will receive the diploma, probably with marks on the very high end of the scale.

Arrangements with two other special students had been that they would finish only the assignments related to the theoretical part of the course. These parts were completed by them with good results.

All other special students had taken it upon themselves to complete all regular assignments, even though this went far beyond the initial expectations. They all met these self-imposed obligations most successfully, two of them, including one of the research assistants, with the qualification *very good*.

The story of the 13 regular students sounds less good. Six of them, the ones with the highest entry qualifications, left the course, three at a very early stage, almost immediately after it was becoming clear what adhering to the

course procedures would mean to them. The other three remained with the course for a considerable amount of time, however without being able to come to class, but in the end they all decided to quit, after having been offered the opportunity to take that decision. What happened?

For the first group of three, some of the raw facts of their short study career are the following (Data Base Item 2.2.8.001, 2.2.4.001/002, and 2.2.5.001-006). Two of them attended three class sessions and wrote one of the three tests, one attended four class sessions and wrote two tests. The two who quit after three sessions did so after having obtained 61 % and 44 % on their first test. The student who left the course after four sessions had obtained 76 % on his first test, but only 60 % on his next one. Their problem seems to have been a complex one, and one of a wider ranging nature. All three had been trained for five years in the German Democratic Republic (East Germany) and had obtained the degree of *Licenciado*. They apparently felt completely out of place in a group they considered to be far below their own level. As reported by the research assistants (Data Base Item 5.2.4.004), one of them (for convenience's sake for the time being called Student A) had already been signaling this attitude during the inaugural session by constantly talking. Another one (Student B) had waited till the next session, in which he participated with his eyes closed, until he opened them to attack in an over-hostile way, and much to the dismay of most other participants, the textbook that was being used and

particularly the fact that it was in Spanish (Data Base Items 5.2.1.096 and 5.2.4.006). The third one (Student C) behaved the way he had predicted he would in the pre-instructional interview (Data Base Item 5.2.1.022), arriving late for class and showing the same lack of interest that had been present in the interview, and that appears to be photographically documented in the posture assumed when preparing to sign the contract (Data Base Item 4.2.1.015).

In occasional, but rather frequent, encounters with Student A (reported on in the data base), which used to take place within the institutional environment of Entity S on occasions when motivational messages were being distributed, there was a tendency to avoid contact, or to minimize it if it could not be avoided. As Student S was heading the department to which the other two students belonged, he was the person most indicated to explain the situation. A combination of two reasons was given: the students knew most of this stuff already because of their training in the GDR, only the terminology was different, and they really did not have time. When asked to return the materials, as agreed upon in the inaugural session, the researcher was given to understand that it would be unfair to let only those people have the materials who had time to study them. It could not be explained, however, why the materials were needed if all the stuff was already known. Nor could it be explained why test results had been so low, considering familiarity with the

content. Responses concerning how essential instructional design elements were applied in the professional environment of Entity S, could also not be answered satisfactorily. Interestingly, when after several months the instructional materials were finally returned, they showed clear signs to have been taken apart to be photocopied.

Contradictions of the kind referred to above suggested that the real reason was a different one. Much evidence could be collected which supports the idea that the problem was related to perceived status differences. The students in question were reported by the research assistants, as well as by some of their colleagues, to be speaking German among themselves, so as to exclude others from their little circle. The researcher had himself at a later stage the opportunity to witness this strange behavior, overhearing a conversation between the three students in question, and some of their colleagues from entity T. Independently, the invitee of Entity S, a top-level educational authority in Mozambique, referred spontaneously to these students in the following terms: "Oh, they know everything already. They have learned so much already, that they don't even recall how ignorant they are" (Data Base Item 5.2.1.141). The matter was further investigated in a debriefing of Entity S, followed by a personal conversation with the director (Data Base Item 1.3.2.002). It confirms the view that, despite the formal argumentation presented, the real reasons for the non-participation of these

students were different and that they most likely had to do with a status complex. The director of Entity S, himself a graduate of the ESMI-1 workshop, apologized for what had happened, recognizing the loss this meant for his institution. He expressed that in the future new, and better, arrangements could be made.

It should be mentioned that Student B for some time seemed to be changing his attitude. He was the same student whose family had been attacked by the Armed Bandits, and who was trying to solve the problems resulting from it. In the process of motivational communication with the student, the course facilitator had, on various occasions, referred to these problems and shown flexibility in offering second chance opportunities to remedy pieces of the instruction the student had been missing. For a long time the student kept mentioning that he would be back in the course. The influence of his two colleagues may have been too strong for him to take that step.

The other two students of Entity S, particularly one of them, who was sharing an office with Student A, have been under much psychological pressure to discontinue their participation in the course. A hostile environment apparently continued to exist at Entity S, where, incidentally, all regular class sessions were held. As reported by the director in a personal conversation (Data Base Item 1.3.2.002) this was also due to political struggles

going on, involving faculty representing a country with different ideological allegiances than those presumed to be represented by the researcher. Some of the smoke of the battle has been documented on a photograph (Data Base Item 4.2.6.004), showing notes left on the marker board in the class room, interfered with in a way showing displeasure, rather than accidental partial erasure.

The reason why three other students (called K, L, and M), all of Entity T, did not participate as expected, is perhaps in part related to the previous three cases, but in other respects it is totally different. Even though these students rarely appeared in class, or participated in other course related events (but they did in some, e.g. Data Base Items 4.2..1.027, 4.2.7.011, and 4.2.4.022), they continued for a long time to consider themselves students of the course, two of them even until after the final class session. What had happened?

Student K was in his final year and preparing himself to defend his diploma work during the same period of time when the ESMI-2 course was taking place. He obtained very good results in the three tests, but then got into severe time conflicts which he was unable to solve. Special arrangements were made so that he could work on assignments autonomously, but when time finally came that he would have been able to do so he received other duties that interfered with that possibility (he was a graduate assistant at Entity S, which meant that after his graduation he would be integrated among the faculty of that institution).

Student L is a similar case, only, he was approaching an intermediate level, rather than the final one, and had exam and assignment due dates coinciding with his ESMI-2 commitments. Besides, one of the two weekly ESMI-2 sessions were known from the beginning to be coinciding with his classes at Entity T. He wrote two tests, the first one with unsatisfactory results, but doing significantly better on the second one, and made arrangements to write the third test, but was told he should prepare himself to participate in an international conference on computer assisted mathematics instruction when he finally got time to continue his ESMI work. Four weeks before the last class session he requested, in response to an interactive motivational message, permission to withdraw from the course (Data Base Item 2.2.1.056). He explained his reasons more completely in the post-instructional interview held with him (Data Base Item 1.3.1.002).

Student M was a faculty member of Entity T. He showed to be very conscientious as regards his responsibilities with respect to his own students, which he would give priority over his own learning needs. It had already been clear at the time the pre-instructional interview was conducted (Data Base Item 5.2.1.026) that he would have to be absent for several weeks during the course because of his students' fieldwork. At the time it had been discussed how that period could be taken advantage of for formative evaluation purposes of the instructional module he would be supposed to

produce in the framework of the ESMI workshop. However, the timing of these periods of absence changed, due to forces beyond his control. They could therefore no longer be used for the planned purpose. He wanted, however, to continue, and shortly before the formal end of the course arrangements were made for him to do so during his institution's vacation period. He participated briefly in an open work session during that period, wrote his third test, and was present in the last class session, participating in the evaluative debate (Data Base Item 1.2.2.022). Again, during the vacation period of Entity T, which for him was not a vacation, he received new tasks which made it impossible for him to honor the agreement. In an interactive motivational message (MM-85-psl-b: Data Base Item 2.2.1.101) it was suggested that he withdraw from the course, an opportunity which he finally accepted in reply to that message (Data Base Item 2.2.1.106), explaining his motives to do so, expressing profound regret, and thanking the facilitator warmly for the kindness and attention he had received. This student had been the only one who, on the occasion when the contracts were signed, had not returned it immediately, but kept it with him - which people had been given the option to do, for further consideration - and handed it in later (Data Base Item 5.2.1.062).

The way student M participated in the evaluative discussion at the end of the course, particularly in the small group discussion, as reported by one of

the participants through a research assistant (Data Base Item 1.2.1.012), suggests that the group of students of Entity S, who had interrupted their participation in the workshop prematurely, has been active in trying to influence their colleagues of Entity T, which occupies a neighboring building. There is no evidence, however, that in the case of Entity T the students' reasons for leaving the course were different from the ones outlined above.

Incorrect communication of the objectives of the ESMI workshop to the candidate participants of Entity T by their superiors, and failure of Entity T to distribute important pre-instructional information (Data Base Item 2.2.1.001) to them, is likely to have contributed to the late discovery by the students of the mismatch between their commitments to Entity T and their course obligations. This fact was brought to the attention of the researcher long after the course had started.

The remaining ten students all completed the totality of the course assignments. Nine of them passed the criterion, one did not. Appendix 11 gives an overview of the number of sessions in which the various students participated, and the final outcome of their participation.

Meeting deadlines

Results obtained while participating in the course should be analyzed in conjunction with the question whether students were able to obtain these

results within a reasonable amount of time. With the exception of a few cases involving special circumstances, the three tests were taken at the planned moments (see Appendix 8). In the prevailing situation this should be seen as a considerable achievement. The educational system does not yet prepare students for autonomous study. For most students, not being lectured, but having to study from a book and discussing learned subject matter in class, was a totally new experience (e.g. Data Base Item 1.1.2.022), which had come as a shock.

Handing in the first part of the design report was accomplished within the tolerated time margin by all participating students of Entity P, with the exception, as a matter of fact, of the student who had abandoned the service of the ministry. The one, fully participating, student of Entity T also submitted this report in time. The two remaining students of Entity S, including a special student, submitted the report with a delay of only a few days.

The story runs different, however, for the students of Entity Q and R. The two students of Entity Q were both special students. One of them was on official mission in a foreign country for a period of approximately one month at the time the report was due, the other one was one of the research assistants, who was over-burdened, besides the research tasks, with her regular work commitments, including travel outside the capital. Both

submitted this report approximately two months late, long after the regular course procedures had ended.

Two of the five regular students of entity R handed in their report in time, the other three with delays of ten days to two weeks. Of the special students, only one had decided to try and complete all assignments. She submitted the report four weeks late. With two of the remaining special students arrangements had been made that they would not carry out this assignment. The other special student was the research assistant, mentioned earlier, with whom it would later be decided that he should not complete the design project, in order to give priority to his research tasks.

It goes without saying that the delays in submitting the first part of the report are reflected in the delays with which the second part was handed in. For Entity P the last part of the report was handed in by one student three weeks ahead of time, by four students within the tolerated time limits, and by three students a week to ten days beyond that period. The student of Entity T presented the report two weeks late, and the two students of Entity S slightly less than a month in one case, and almost six weeks late in the other case.

One student of Entity R also presented his second report almost six weeks late, the next one followed ten days later, whereas all remaining students of Entity R, as well as the two special students of Entity Q, submitted their reports approximately two months late, in the week, the end of which

was marked by the graduation ceremony. The last report, by the special student who had been abroad for a month and whose tasks as national director had often interfered with his intentions to work on the course assignments, was received the day before the ceremony. That of the research assistant was handed in only two days earlier. In both cases these reports were the laudable result of considerable human sacrifice.

Analysis of students' learning accomplishments

In analyzing the students' accomplishments described above regarding instructional outcome, and the time period within which the results could be obtained, the following conclusions are drawn:

- 1) The overall result of the course was more than just satisfactory. This conclusion is a modest translation of the praise attributed to the facilitator during the graduation ceremony by officials representing the funding agency and the ministry (Data Base Item 1.4.2.003). Even though a considerable number of the initially 22 regular students had not lived up to the expectation, an equally considerable number of special students, who had not been expected to complete the course, had taken up their places. On the occasion of the graduation ceremony, 15 diplomas could be distributed, and seven participants received a certificate of participation, one of which is likely to be converted into a diploma, as

soon as its holder completes her final assignment. Of the seven certificates, only three reflect failure to pass the criterion. Some of the special students with whom it had been decided that they would complete only a limited task, have done so with very good results.

- 2) If motivational messages may be considered to have had a positive influence on the above result, it should also be recognized that they have failed in prompting other students to reach the instructional goals. This does not necessarily mean that the messages have not had an effect in these cases. Evidence to be analyzed later on in this chapter, as well as in the next chapter, supports the idea that they have influenced the students, though not in all cases by helping them to overcome their motivational restraints. In some cases the solution was found in avoiding the problem. In the cases where students failed to complete the course, there are actually two extremes. In some cases the motivational communication process appears to have accelerated students' withdrawal, through enhanced awareness of existing dissonance, whereas in other cases it has kept them longer from formally withdrawing themselves from the course, as it helped students maintain their interest in completing the course work. In cases of the latter nature, students had to be offered an opportunity, within the motivational communication process, to make the decision to withdraw without creating a dissonance within their self-

conception (e.g. Data Base Items 2.2.1.056, 2.2.1.089, and 2.2.1.101). It could, however, also happen that the offer of such an opportunity resulted in a reaffirmation of the desire to continue the struggle (e.g. Data Base Item 2.2.1.105).

- 3) The degree to which students were able to complete their course work according to schedule shows great variance. The best match between planning and results, comparable to what had been the case in the ESMI-1 workshop in 1986, was reached in Entity P, which was institutionally prepared to receive the course. In the other organizational entities, major problems resulted from the fact that this very demanding course had not been taken into account in the planning of the entities' regular activities, leading to instances of time conflict many students had either not the creativity or the authority to solve. The long delays in completing the final course products for a considerable number of students, obviously constituted increasingly important factors of demotivation for them. Many claim that the motivational messages saved them from giving up. Some attribute this effect even to one particular motivational message, usually a different one for each case, that touched the right string in them (e.g. Data Base Item (1.3.1.007).
- 4) For those students who did all the course work, the overall quality of what they produced was generally somewhat lower than the quality

produced by the students of the ESMI-1 workshop, three years earlier (in percentages approximately 5 % lower). In both cases the distribution of the results is at least bimodal (an inflection at the higher end of the curve could be interpreted as the result of the presence of a third distinct group). This slight difference can be considered to be accounted for by the differences in entry conditions. The part of the second group that completed all the course work did no longer include particularly the students with higher qualifications. Besides the slightly lower qualifications of the remaining part of the second group in which this resulted, they were far less experienced in the design of instructional materials, if they had such experience at all. Also, they were considerably less well versed in the Portuguese language, as can be concluded from an inspection of the students' products (Data Base Items 2.2.6.003 and 2.2.6.004). A most striking example is that of a participant, a certified lower secondary school teacher, who, in defending her choice to design an instructional module about the correct usage of Portuguese, does so, beginning her report with a grammatically incorrect sentence. The problem of insufficient mastery of the official language of instruction was so severe that it has led the researcher, in his role as consultant, to propose to the authorities overseeing Entity P to take adequate action, either by providing training, or by substituting personnel, and to take this aspect

into account in future recruitment activities (Data Base Items 3.2.4.002 and 3.2.4.003).

In view of the above factors, it is considered that the slight differences in results obtained by the students, and the much larger differences in time needed by the students to attain these results, in comparing them with similar information about the ESMI-1 group (Visser & Keller, 1989), are accounted for by the differences in entry conditions of the students and in the circumstances surrounding their participation in the course. As far as the motivational messages have played a role in both cases, it should therefore be concluded that they have been similarly effective in terms of instructional outcome of those students who completed the assignments they had undertaken to complete. No comparison is possible for those students of the ESMI-2 workshop who, for various reasons, did not live up to their, and the researcher's, initial expectations.

THE VALIDITY ISSUE: Indicators of motivational behavior

The above evidence alone, though instructionally satisfying, is no proof that the clinical use of motivational messages was a major factor in reaching the described outcome. How can it be found out whether they did play a role, and how important that role was?

On the following pages evidence, contained in the data base, will be analyzed so as to shed light on the above question. In that connection particular reference will be made to students' responses to questionnaires (Segment 2.2.7 of the data base), to certain exercises that served the dual purpose of instruction and data collection (Segment 2.2.2), to their reactions in the open-ended end-of-course evaluative discussion (Data Base Item 1.1.2.022), as well as observed verbal and attitudinal behavior of students towards the messages (particularly Segments 5.2.1., 5.2.4, and 5.2.5 of the data base), and their reactions in interviews (Segment 1.3.1 of the data base). Influences of the use of the motivational messages on the instructor will also be referred to (Segments 5.2.1, and particularly 5.2.4 and 5.2.5 of the data base).

The assessment of student motivational status questionnaires

An example of the above questionnaire is shown in Appendix 1. Its main use was for the instructor - and motivational facilitator - to get information about the kind of motivational challenges the participants were

facing, and how they succeeded coping with them. They can be, and were therefore, also used as a means to find out whether students would in any way refer to the motivational messages as something that influenced their motivational behavior.

In the study of the previous case (Visser & Keller, 1989) the content of these questionnaires was analyzed, considering three different ways in which students could refer to the messages, i.e. by mentioning them directly, by referring to their content, or by referring to them inferentially. In analyzing the content of the questionnaires used in the context of the ESMI-2 case, two other aspects were isolated among the responses. i.e. responses referring to the role of the facilitator, and those referring to the environment.

A total of eight questionnaires (A to H) of the above type was administered during the ESMI-2 course. As, with the exception of Questionnaire A, they were responded to in class, the response rate was 100 %. While Questionnaire A was taken home to be filled out, its response rate was also 100 %. Students were encouraged to try and list three different motivational aspects. They often produced three such responses (for the demotivational aspects they found it normally more difficult to list three aspects), and on occasion even more than three, particularly when responding to Questionnaire H, which had provided them with extra space to do so. Table 2 shows the coding result.

In interpreting the results presented in the table, it should be noted that Questionnaire A was given to the students at the end of the inaugural session. Their responses reveal that it was generally filled out after they had

Table 2

Different kinds of references made to motivational messages and related factors in motivational status questionnaires

Type of reference	Questionnaire							
	A	B	C	D	E	F	G	H
Direct mention	-	3	1	2	2	1	3	5
Reference to content	-	2	5	-	1	-	1	1
Inferential reference	3	3	11	8	11	3	4	2
Reference to facilitator	-	9	11	5	4	10	4	12
Reference to environment	3	20	13	13	10	16	9	22
Total number of responses	74	69	72	55	54	50	47	70

engaged in studying the first chapters of the main instructional text (Dick & Carey, 1978), i.e. shortly before the second session. Questionnaires B to G were administered at regular intervals during the course. Questionnaire H was filled out a week before the last regular class session. The results in Table 2 refer to listings of motivational aspects only. No references were found to be made to demotivational effects, either direct or indirect, of the messages.

The results shown in Table 2 confirm those of the previous study (Visser & Keller, 1989). The number of times direct reference is made to the motivational messages is relatively small. In the previous study it was 2.6 %. In the present study, excluding from the comparison Questionnaire A, as in the ESMI-1 case no questionnaire was administered at the beginning of the course, 4.1. % of the responses mention the motivational messages directly. These percentages are small, however, they represent the students reactions to completely open prompts to state what motivated them. Within the wide range of possible reactions, a direct reference to the motivational messages was unlikely, because of their unobtrusive use. No attention was ever drawn to them, and they were given no name. Initially the students were found to have difficulty talking about them, until they became known emically as *little notes, mail, or cards*.

Indirect references (by content or inferentially, the two categories taken together) are more frequent in both cases. In the ESMI-1 case 18.6 % of the

responses refer to the messages, in the ESMI-2 case 12.5 % of the responses are indirectly related to the motivational messages. The reduced proportion in the ESMI-2 study is accounted for by the introduction of the two new coding categories, those of *facilitator related responses* and *environment related responses*. Many of the facilitator related responses, such as "the facilitator's concern to provide guidance to the students' work", "the constant encouragement by the instructor", or "the attention given by the facilitator, constantly providing information and encouragement so that all would reach the finish...", would have been coded as inferential references to the motivational messages, had this category not existed. Considering that 13.4 % of the responses found in Questionnaires A to H are facilitator related ones, it appears justified to claim that at least the same proportion of indirect references to the motivational messages was made in the ESMI-2 case as in the ESMI-1 case.

The reason why in the ESMI-2 study the two new coding categories were included is that the formulation of the responses suggests that the motivational messages result in enhanced awareness of the presence of the facilitator, as well as in social behavior that enhances the instructional environment, particularly as regards cooperation among students. The presence of these two awareness factors was also identified via other data sources, particularly direct observation of and contact with students through the research assistants (Segments 1.2.1 and 1.2.2 of the data base) and is part of

the conclusions presented in the research assistants' independent report (Data Base Item 5.2.5.002; see also Appendix 11, particularly conclusions 1, 4, 5, and 8).

It is of interest, in the above connection, to compare the responses given to Questionnaire A with those found on the remaining questionnaires. At the time that questionnaire was completed all students had had an initial exposure to the instructional environment and to the facilitator. Part of the students, even, particularly those pertaining to Entity P, had been working intensely for more than a month with the facilitator. Yet, no facilitator related responses are made, and only very few responses relate to the instructional environment. Three responses can be indirectly related to the motivational messages the students had been receiving. Most responses to Questionnaire A refer to students' individual interests and concerns. The comparison suggests that the dynamics resulting from the clinical use of motivational messages requires some time before it really takes off.

As a final remark about the interpretation of Table 2, it should be mentioned that environment related responses occasionally show overlap with the facilitator related responses or with the indirect references to the motivational messages. The first type of coding coincidence could occur in responses like the following: "The effort undertaken by the facilitator to make sure that all participants fulfill in an integral way the tasks foreseen", which

reveals enhanced facilitator awareness as well as enhanced concern with the instructional environment. Another type of overlap could occur when, for instance, reference was made in one of the responses to the concept of "professional association" between the participants, shortly after that same idea had been given attention in a motivational message (MM-32; Data Base Item 2.2.1.040). Such a response was coded both as a content related reference to the motivational messages and as a response revealing enhanced awareness of the instructional environment.

Qualitatively, some of the responses found in the questionnaires, reflect the importance the messages have had for some of the participants. One mentions that they "almost always coincided with my periods of major lack of motivation and despair". Another student refers to the environmental effects, expressing amazement at the motivation that had resulted from "the friendship found to be living in a group that was totally heterogeneous from the point of view of culture, people's functions, and other characteristics".

The process of constant research debriefings (Segment 1.2.1 of the data base) had already revealed an important link between the contract signed at the beginning of the course, categorized in the framework of the motivational communication process as an interactive motivational message, and the impact of the remaining motivational messages. One student, and, interestingly, one who has long struggled before giving up in the face of

overpowering work related circumstances, lists as one of his motivational factors, more than two months after he had signed the contract: "One does not break a pledge if not motivated by quite strong reasons - principle of respect for pledges" (Data Base Item 2.2.7.012), and it made him retain his desire to finish the course for another one months and a half after he wrote down those words.

"The form in which results of exercises carried out during the course were communicated" to the participants is an aspect mentioned by yet another student. An important part of the motivational communication concerned providing feedback to the students in a way that would allow them to interpret their results in a way commensurate with their own abilities and circumstances. Other evidence, to be discussed later, reveals that this has had an important influence on the instructional environment. One of the things the instructor could have done entirely wrong would have been to follow the established practice in Mozambique to communicate about such aspects publicly, either in spoken words or in writing. The principle of absolute confidentiality was maintained all through the course, and research assistants, who were operating as participant observers, were specifically instructed to know their great responsibility in that respect. Their conduct was impeccable.

Both facilitator and environment related responses make reference to *constancy, consistency, regularity, continuity, organization,* and the *systematic character* of what was happening at the interface of instructor and instructees.

Comparison of the qualitative content, as indicated above, of the responses obtained on the motivational status questionnaires used in the ESMI-2 workshop with those available from the previous study, reveals a high degree of similarity. If there is any difference between the qualitative content of the responses in the two cases, it would be that in the ESMI-2 case they are generally more explicit, and that more generally than in the previous case the maximum number of responses, i.e. three, is given to each prompt.

Unlike the previous case, no evidence was found that the motivational messages ever had an effect counter to the intended one. The motivational facilitator's enhanced perceived competence at applying the strategy may be related to this.

The end-of-course evaluation

Under this heading, attention will be focussed in the first place on data collected using the same, or similar, instruments as the ones used in the previous study, i.e. the end-of-course questionnaires (Data Base Items 2.2.2.025, 2.2.7.013, 2.2.7.014., and 2.2.7.015), and the open-ended end-of-course evaluative discussion (Data Base Items 1.1.2.022, and 2.2.7.016). Additionally,

information will be drawn from instructional procedures, not yet mentioned, conducted towards the end of the course, designed to serve the supplementary purpose of collecting data (Data Base Items 2.2.2.018, 2.2.2.020).

In the context of the end-of-course evaluation, students were asked to respond to the questionnaire presented in Appendix 3 (Data Base Item 2.2.7.014; Data Source 2a). The questionnaire asked the student to rate, on a 5-point scale, the importance of each of 16 different components of the instructional strategy applied in the ESMI-2 workshop, including the use of motivational messages, as well as components related to these 'little notes'. The components were placed in random order, and students were explicitly told that this had been done, so as to avoid any suggestion that the designer of the questionnaire might have had any particular order of importance in mind when producing the instrument. A key to the interpretation of the 5-point rating scale was provided on each page of the questionnaire. Besides rating the components of the instructional strategy, students were also asked to provide a rationale for their rating in a blank space provided. This was done for two reasons: (1) it would stimulate students to think seriously about their responses, (2) additional information would become available that would allow interpreting the ratings given. A final blank page was provided for further comments the students might have. The questionnaire was

administered one week before the last regular class session took place. Students filled it out at home and returned it in a blank, unmarked envelope to the researcher. The return rate was 100 %. Only very rarely would students fail to respond to an item by rating it, giving as an explanation that they had no opinion about the particular component. All students provided extensive detail as regards their rationale for rating the items the way they did. Seven out of 22 students used the blank page provided to elaborate further on their feelings. Two used it just to expand on the rationale they were providing regarding the particular items. The care demonstrated in completing these questionnaires in a context of anonymity, and at a time students were under much pressure to work on their course assignments, shows the kind of cooperative spirit that had developed during the workshop. People felt responsible for each other's work, including that of the instructor. A similar instrument had been used in the end-of-course evaluation of the ESMI-1 workshop in 1986. The only difference was that the components had not been randomized that time, but placed in chronological order of appearance in the course.

The results of the above questionnaire will be analyzed in conjunction with those of another instrument, applied one week later. This additional instrument, though not given the meaning of a questionnaire in explaining it to the students, did have the structure of it. For the students, however, it was

an exercise, which they engaged in at a moment likely to have been experienced as appropriate, in view of what they had been learning. During the last class sessions of the course, much attention had been given to matters of developing appropriate strategies of instruction. Within that context, the choice of media, and ways to use them, is a natural concern. In preparation for the very last session, the students had been given the following homework (see e.g. MM-69, Data Base Item 2.2.1.081).

In preparation for the last session, think about the following problem:

The media used in teaching contribute, in accordance with their own characteristics, to achieving the desired results. They are important both because of the role they play to improve the instruction and because of the way they facilitate motivation.

*In the **ESMI** course/workshop the following media, among others, were used:*

- 1. Documentation distributed before the course*
- 2. A Gantt chart of the course activities*
- 3. The contract that was signed*
- 4. The Dick & Carey book*
- 5. The additional instructional materials*
- 6. The 'little notes'*
- 7. The facilitator*
- 8. The Activities Manual*
- 9. Your colleagues.*

Think about what the importance has been of each of the media, both for instruction and for motivation. Concerning the instructional aspects, consult the Dick & Carey model, particularly as regards the instructional strategy; for the motivational aspects, consult John Keller's ARCS model.

The researcher was able to observe that indeed serious attention was given to this task, particularly as it had been communicated by motivational message only to those students who had missed the class (some because they

were formatively evaluating their designed materials) in which the other students had received the assignment by way of the oral tradition. Many of the latter ones went borrowing - or copying - the written message from their colleagues who had received it. (Apart from showing their seriousness in doing the assignment, the event also demonstrates the appreciation that at that time had developed for the motivational messages.) The research assistants later reported that some of their colleagues had not only prepared themselves mentally, but had come to class with extensive notes about the problem. In class (Data Base Item 1.1.2.022) students were given a worksheet (Appendix 4; Data Base Item 2.2.2.025) in which they were asked to rate, on a 5-point scale, both the instructional, and the motivational, importance of each of the above mentioned media, and to provide a rationale for their response. They were also given one extra page for additional comments if they had any. Filling out the worksheet met with the same zeal and serious attention that has already been reported regarding the questionnaire about the instructional strategy components. Naturally, all worksheets were returned. This latter instrument did not have a near equivalent in the end-of-course evaluation of the ESMI-1 workshop. The ESMI-1 students did, however, complete a proper questionnaire rating the importance, not distinguishing between instructional and motivational interests, of the same nine media.

The detailed results of the administration of the above two instruments to the ESMI-2 students can be found in Appendices 12 and 13 to the present

Table 3

Comparison of importance ratings attributed to various instructional strategy components by students of the ESMI-1 and ESMI-2 workshops.

Instructional strategy component	Mean/S.D. ESMI-1	Mean/S.D. ESMI-2
01) Study of Dick & Carey textbook	4.62/0.77	4.38/1.02
02) Study of additional instructional materials	3.31/1.03	3.90/1.04
03) Class presentation of theories and methodologies	3.85/1.07	4.29/0.96
04) Class discussion of materials studied	3.85/1.07	3.95/1.07
05) Carrying out exercises	4.15/0.69	4.29/1.01
06) Carrying out of individual design project	4.77/0.60	4.71/0.64
07) Consulting with facilitator	2.92/1.19	3.81/1.08
08) Class presentations by participants	2.92/1.04	2.57/1.25
09) Writing report about individual design project	4.85/0.38	4.71/0.64
10) Three tests about content Dick & Carey textbook	4.46/0.78	4.67/0.80
11) Provision of feedback by facilitator about results	4.15/0.80	4.67/0.66
12) Facilitator guidance of participants	3.62/1.33	4.00/1.05
13) Communication with students through "little notes"	2.54/1.05	3.38/1.16
14) Facilitator stimulation of student interaction	3.38/1.26	3.71/1.15
15) Participation in formative evaluation of workshop	3.92/0.95	3.62/1.02
16) Visit to Schoolbook Publishing House	not applicable	2.19/0.98

study. Table 3 above shows, side by side, the importance ratings of the various instructional strategy components attributed by students of the ESMI-2 and ESMI-1 workshops.

Table 4 gives a side-by-side comparison of the means and standard

Table 4
Comparison of importance ratings of media used in ESMI-1 and ESMI-2 workshops

Medium	Mean/S.D. ESMI-1 (general)	Mean/S.D. ESMI-2 (instr.)	Mean/S.D. ESMI-2 (motiv.)	motiv./instr. ratio ESMI-2
01) Pre-instructional documentation	not evaluated	2.52/1.72	3.67/1.11	1.46
02) Gantt chart of course activities	3.38/1.45	3.27/1.32	3.27/1.24	1.00
03) Contract (signed pledge statement)	2.62/1.19	2.14/1.58	2.73/1.58	1.28
04) Dick & Carey textbook	4.92/0.28	4.68/0.78	2.91/1.34	0.62
05) Additional instructional materials	3.69/0.75	4.27/0.88	4.05/1.00	0.95
06) "Little notes"	2.54/0.88	2.86/1.39	3.91/1.11	1.37
07) Facilitator (+ media support)	4.62/0.65	4.55/0.80	4.59/0.96	1.01
08) Activities Manual	4.69/0.48	3.90/1.26	3.48/1.25	0.89
09) Your colleagues	not evaluated	3.68/1.25	3.95/1.13	1.07

deviations of the importance ratings of the media used in the two ESMI workshops. As mentioned before, no differentiation as to motivational or instructional importance was made in the case of the ESMI-1 course. The same table also gives the ratios of perceived motivational importance over perceived instructional importance of the various media evaluated by the ESMI-2 students.

Inspection of the two tables above leads to a variety of conclusions. One of the questions that can be asked is, whether participants in the two course, while they may differ in their degree of appreciation for instructional strategy components and media, do still put them in approximately the same order. From Table 3 it can be derived that the instructional strategy components were conceived as being arranged in order of importance by the two groups of students in the following ways:

ESMI-1: 09 06 01 10 05 11 15 03 04 12 14 02 08 07 13

ESMI-2: 09 06 11 10 01 03 05 12 04 02 07 14 15 13 08 16.

Comparison of the two arrays shows that in most cases, i.e. 12 out of 15, components have not been displaced by more than two steps within this array of 14 steps. Of the remaining three components, two were displaced three steps, and one was displaced six steps.

Something similar holds true for the way the importance of the various media, which are of course related to the instructional strategy components, were evaluated by the two groups. Below follow the two arrays, excluding Media 01 and 09, which were not included in the evaluation made by the ESMI-1 group. Also, the array for the ESMI-2 group is based on the ratings given for *instructional* importance.

ESMI-1: 04 08 07 05 02 03 06

ESMI-2: 04 07 05 08 02 06 03

Here again, the conclusion is that the large majority of the media (six out of seven) have not been displaced by more than one step within the array of six steps. The only one that was displaced more, was displaced by two steps.

The picture, however, starts to look different, if a look is taken at the comparison of the ESMI-1 importance ratings for the various media in combination with those for *motivational* importance as perceived by the ESMI-2 group of students. Then the following arrays appear, excluding again Media 01 and 09.

ESMI-1: 04 08 07 05 02 03 06

ESMI-2: 07 05 06 08 02 04 03

Now only two of the media remain more or less in place (either not displaced or displaced by one step), whereas five of the seven media suffered a displacement by more than one step within this array of six steps. It seems justified, therefore, to assume that when students are asked to rate the importance of certain things within an instructional context, their tendency is to do so on the basis of what should perhaps be called a traditional view of education, which emphasizes information and simple forms of information processing, rather than ways of facilitating and optimizing the processing of information for purposes related to people's interests, i.e. from the point of view of management of their motivation to learn. A factor which probably plays a role in that context is that motivational intervention is by nature - or is it tradition? - less obtrusive than instructional intervention. One would normally not expect a teacher to tell his or her students: "Now, wait a minute, I'd like to motivate you today to try and understand what caused the peoples of the Third World to liberate themselves from colonial rule". In the context of established teacher behavior it is much more likely that something like the following would be heard: "Today I'll tell you something about our colonial past. Our lesson will be about some of the things that led the peoples of the Third World to liberate themselves from colonial rule". The difference in approaching the issue of how the teacher should tell students what s/he

intends to do instructionally or motivationally is of course related to how such things are appreciated by the audience. People may simply not like to hear someone say that they are going to be motivated. It sounds like an intrusion into one's personal domain. And that interpretation, again, comes from linguistic limitations in talking about motivation. An equivalent to the teaching-learning dyad does not exist in the field of motivational intervention.

Applying similar exercises to comparing the separate motivational and instructional importance ratings for the ESMI-2 group with the arithmetic means of these ratings, shows that the average ratings are more in line with the instructional ratings than with the motivational ratings. For the instructional ratings, six of the seven media remain within one step of their original position, whereas for the motivational ratings this happens to five of the seven media. In each of the two comparisons, the larger displacement comprises two steps within the array of six.

What are some of the other conclusions that can be drawn from Tables 3 and 4? Calculating the average of the mean importance ratings for the various instructional strategy components shows that the overall appreciation for the instruction by the ESMI-2 students was slightly higher than that of the ESMI-1 students (4.04 as compared to 3.82, averaging only Components 01 to 15). Looking at the media, the inverse applies. Averaging the mean ratings for the seven media the importance of which was assessed by both groups of

students, one finds a slightly lower appreciation on the part of the ESMI-2 students, as compared to how the ESMI-1 students thought about the media. The average mean rating by the ESMI-2 students of instructional importance was 3.66, and that of motivational importance 3.56. The average non-differentiated importance rating by the ESMI-1 students was 3.78.

None of the instructional strategy components or media appreciated gets a mean rating lower than 2, which means that they all are perceived as having made at least some difference. The great majority of rated items falls in the range of appreciation levels 3, 4, and 5, meaning that their perceived importance is seen as corresponding to clear, dramatic, or fundamental differences that have resulted from the inclusion of the particular components or media in the mix.

Looking at what one sees in comparing the two sets of data, both as regards their overall averages, and the way people tend to order those things in their minds, it can be concluded that the differences are not very great. It seems that for the two cases, ESMI-1 and ESMI-2, we are basically looking at the same overall picture, however with interesting shifts of emphasis as regards a number of details. Some of these details will be discussed now.

Table 3 shows that, in moving from the ESMI-1 case to the ESMI-2 case, the appreciation for a number of instructional strategy components has increased. Interestingly, they all have somehow to do with the facilitator.

Component 02, the study of additional instructional materials, relates to the facilitator in the sense that those materials were either developed by the instructor, or excerpted and adapted by him, which may be assumed to be perceived as a higher degree of involvement than just selecting a textbook, particularly as they were distributed at different moments during the course. The same holds true for Component 05, carrying out exercises, which were either guided in class by the facilitator, or distributed by him to work on at home. Component 10, writing three tests about the content of the Dick & Carey textbook, involved the facilitator in terms of in class guidance, as well as preparation. All other instructional strategy components, 03, 04, 07, 11, 12, 13, 14, relate to direct instructor interaction with the students, either at the general level, in class, or individually. By far the greatest increase in appreciation is found for the use of the motivational messages, together with Component 07, consulting with the facilitator, something the students were frequently encouraged to do exactly through the motivational messages.

The instructor was the same person for both workshops. Even though the two workshops were held almost three years apart from each other, he may be considered to have been equally experienced in the regular classroom procedures on both occasions, having accumulated that experience over periods of 23 and 26 years, respectively. Also, as has been demonstrated before, the two groups of students were quite similar. What was different,

though, was the degree to which use was made of the motivational messages strategy. Almost three times as many messages had been distributed to the ESMI-2 students when the end-of-course evaluation took place, than the number that had been distributed to the ESMI-1 students prior to the evaluation date. Also, as can be verified by inspection of the data base, the medium has been developed much further. Many more messages were personalized or even personal, a greater variety of ways of designing them was used, and they are more creative and more direct in their approach. Signing the contract was the only interactive component of the motivational communication process in the ESMI-1 case. In the ESMI-2 case, many more interactive messages were created, challenging the students in different ways.

Of the instructional strategy components the appreciation for which increased, the numbers 07, 11, 12, 13, and 14 can be accounted for directly as a possible effect of the improved, more effective, use of the motivational messages strategy, whereas Components 03, 04, 05, and 10 can be seen as to result from increased awareness of the role of the facilitator, which, as has been argued before, can be related to the motivational messages. The notion that motivational messages represent the presence of the facilitator is even the first conclusion drawn by the research assistants in their independent research report. Some students refer to this characteristic of the motivational messages specifically, e.g. in the following words (Data Base Item 2.2.2.025):

A nice experience of communication with the student. I constantly felt the presence of the facilitator, as if I were talking with him. It motivates to do the work, provides guidance, and reminds us of the most important tasks, the future ones, and the present ones. It makes clear that the facilitator is with us.

Table 4 confirms the above interpretation, though in a less generalized fashion. This can be seen by calculating the average appreciation (arithmetic mean of instructional and motivational importance ratings) by the ESMI-2 group for the various media and comparing the calculated values with the corresponding ESMI-1 ratings. The 'big losers' are the Dick & Carey textbook (Medium 04) and the Activities Manual (Medium 08), which show drops of 1.12 and 1.00 points, respectively, in going from the ESMI-1 to the ESMI-2 case. Both media are least related to facilitator presence, having been handed out at the beginning of the course. The 'big winners' are the 'little notes' (Medium 06), with an increase in appreciation of 0.85, and the additional instructional materials (Medium 05), which receives an appreciation 0.47 point value higher from the ESMI-2 students than from the ESMI-1 students. The other three media evaluated by both groups are appreciated only slightly less by the ESMI-2 students than by the ESMI-1 students (decreases varying between 0.05 and 0.18). Clearly, the motivational messages ("little notes") stick out positively among the range of individual comparisons of media appreciations.

It is reminded with regard to the above discussion that the numerical values given in Tables 3 and 4 represent ratings on a 5-point scale with clearly defined meanings for each of the point values. Considering the natural dispersion of ratings (see raw data in Appendices 12 and 13), some of the higher ratings approach the ceiling of what can reasonably be expected. This holds true, for instance, for the instructional effectiveness of the Dick and Carey (1978) textbook, and for both instructional and motivational importance of the facilitator. Also, increases in appreciation of the importance of certain media, such as 0.85 for the motivational messages, should be looked upon as "considerable", when interpreted relative to the latitude of the measurement scale.

It is also interesting to compare how various items were evaluated in the context of an instructional strategy concern (Table 3) and in that of a media concern (Table 4). Some of these items were actually looking at almost the same - which is, of course, not the same - thing, particularly the Dick and Carey textbook, the additional instructional materials, and the "little notes", while one medium, the facilitator could be linked to a combination of things the facilitator did, i.e. class presentation, advising, providing feedback, providing guidance, and stimulating student interaction. The difference between the two perspectives is that of looking at a medium from the point of view of particular actions mediated by it (Table 3) and that of looking at the

medium as such (Table 4), which may include that it is perceived as having a wider or narrower potential than that represented by the various actions for which it was used. For the former three media a direct comparison is possible between the appreciation of what was done through the medium (Table 3) and the medium itself (Table 4). For the facilitator this is done by averaging the ratings of the five facilitator related instructional strategy components mentioned above and comparing that composite measure

Table 5

Comparison of ESMI-1 and ESMI-2 student appreciation for 'things done through media' and 'media as a potential for doing things'

Item evaluated	Importance of things done through medium		Importance of medium for doing things	
	ESMI-1	ESMI-2	ESMI-1	ESMI-2
Dick & Carey textbook	4.62	4.38	4.92	3.80
Additional instructional materials	3.31	3.90	3.69	4.16
"Little notes"	2.54	3.38	2.54	3.39
Facilitator (as lecturer, adviser, provider of feedback and guidance, and stimulator of student interaction)	3.58	4.10	4.62	4.57

with the media rating. For the ESMI-2 case, the two media ratings were taken together and averaged. Table 5 above shows the result.

The comparisons should be made between the first and third columns for the ESMI-1 case, and between the second and fourth columns for the ESMI-2 case. This results in what can be appreciated in Table 6 below.

These results are most interesting. They show that often the medium is perceived as potentially more important than what it actually does. If that perception is a truthful reflection of the real possibilities media possess, than it would mean that we often fall short - or perhaps should I rather say has the instructor fallen short - of employing the full potential of these media,

Table 6

Comparison of differential appreciation of the importance of a 'medium for doing things' as compared to the 'things done through the medium' for ESMI-1 and ESMI-2 students

Item evaluated	Differential appreciation of the importance of 'medium as a potential for doing things' over the importance of the 'things done through the medium'	
	ESMI-1	ESMI-2
Dick & Carey textbook	+0.30	-0.58
Additional instructional materials	+0.59	+0.26
"Little notes"	0.00	+0.01
Facilitator (as lecturer, adviser, provider of feedback and guidance, and stimulator of student interaction)	+1.04	+0.47

including himself. There are, however, two exceptions in the above list. In the case of the motivational messages, the medium is consistently considered to have been in complete balance with what it was expected to be able to offer. The other exception is the Dick and Carey book for the second group. There the students' perception is that they actually got more out of it than what was intrinsically in the book.

The latter event is indeed a possibility, if the interaction among media is taken into consideration. In that connection, it is important to bear in mind that the motivational messages constitute very much a medium that interacts with almost all other media. Its higher degree of development, mentioned before, in the ESMI-2 case, is responsible for a stronger interaction between the motivational messages and the other media in the present case, than the interaction that was present in the ESMI-1 case. On the basis of the same hypothesis it can be explained that the differential appreciation of the importance of all 'media for the purpose of doing things' above the importance of 'things done through the media', decreases for all media, except the motivational messages themselves, in going from the ESMI-1 case to the ESMI-2 case. For the Dick & Carey book the decrease is so dramatic that it results in the differential appreciation falling below zero. As a matter of fact, the increased appreciation for the motivational messages in comparing the ESMI-2

students with the ESMI-1 students, both as a medium, and because of the things it actually does, is perfectly in conformity with the above explanation.

A final look at Table 4 should focus on the figures in the last column. They represent the ratio of perceived motivational and instructional importance. A figure greater than one expresses emphasis on motivational importance over instructional importance, a figure smaller than one does exactly the opposite. These ratios show that, at least in the minds of the public receiving them, the motivational messages transmitted the correct emphasis. Considering that the pre-instructional documentation, the Gantt chart, and the contract signed, were an integral part of the process of motivational communication (see Segment 2.2.1 of the data base), only the Gantt chart, a single item among many, fell somewhat short of the expectations in this respect.

As to the ratings of motivational importance as such, the facilitator is seen as having received the highest marks. This, again, is in line with the hypothesis that the motivational messages enhance the teacher's presence (research assistants' conclusion number 1, and the argumentation presented earlier in this study). None of the media evaluated receives a rating below 2.73, a value very near the point on the 5-point scale considered to express importance of the medium and the fact that its inclusion in the system clearly makes a difference. The motivational messages themselves, the "little notes",

receive a motivational rating of almost 4, expressing great importance, and the capability to make a dramatic difference.

I shall now turn to some of the more qualitative data. As part of the end-of-course evaluation procedures, students responded to a questionnaire of the type they had meanwhile become accustomed to, the *student motivational status questionnaire*, an example of which is presented in Appendix 1. However, for this last occasion, which presented itself to them a week before the last regular class session took place, they were asked not just to reflect on what had mattered to them motivationally during the last week, but rather to reflect on their experiences in that respect all along the course. Some of the results of the students' interaction with that instrument have already been presented earlier in this study (Table 2). A more detailed account can be found in Appendix 14. The information available in that appendix shows on the one hand the enormous complexity of the entire field of motivational and demotivational influences that surrounded the students, on the other hand it qualitatively confirms the explanation hypothesized above. Frequency counts of the various concerns indicate, besides the "little notes" and immediately related items, particularly also the enhanced awareness of facilitator presence and of the socio-instructional environment. This pattern is not only apparent among the influences listed as motivational, it equally appears among those that were mentioned as having detracted from the students' motivation.

The same listing as presented in Appendix 14, together with the data presented in Appendix 12, was provided as an input to the open-ended end-of-course discussion, held during the last class session (Data Base Item 1.1.2.022). The content of that discussion confirms the validity of the earlier collected data and the way they were analyzed and synthesized. It furthermore confirms the description given in this chapter of the student population and the circumstances of their participation in the workshop. Particularly strong in this discussion was the emphasis on what had happened to the students who had decided to discontinue their participation. The fact that no explanation had been given by these students to their colleagues met with great social disapproval, the degree of which not only surprised the researcher, but also two outside international training consultants who had been invited to accompany the evaluation procedures. The enhanced environmental awareness stuck out clearly from among the various aspects that characterized this event. Care had to be taken in conducting the debate to protect those not present from undue verbal process (Data Base Items 1.1.2.022 and 1.2.1.012).

A final part of the end-of-course evaluation procedures applied in both the ESMI-1 and the ESMI-2 case was that of administering the questionnaire of Appendix 5 (Data Base Item 2.2.7.015), in which students were asked to list the five most important things they had learned in the course/workshop. The

responses found on these questionnaires can, in part, be related to the various components of the Dick & Carey (1985) systems approach model for designing instruction. However, other aspects are mentioned as well. A considerable number of times the *importance of motivation*, the *importance of group interaction*, and the *importance of participatory learning* are mentioned among the more formal aspects of what students have learned. Just coding and counting such answers would not do justice to the richness of information brought about by the students' interaction with this simple instrument. Instead, I prefer to simply cite a number of the responses given to the question what people had learned. They follow here without further comment.

- * *I saw and witnessed the importance of the messages in the teaching and learning process.*
- * *Really, many things were learned in this course that, if we would apply them in full in the process of our work, many successes would be gained in education in the PRM [People's Republic of Mozambique].*
- * *The ESMI course/workshop was a new experience. The conditions under which it was conducted were different when compared with the courses in which I participated before. In that sense it became an opportunity to form new attitudes as regards the teaching tasks and even as regards ways to relate to other people.*
- * *Totally beyond the objectives of the course, I went using a typewriter. I did not know how to use it, but now I already know how to type a text, though with typos, but it's readable.*

- * *With the help of my colleagues and the facilitator, I learned to discuss and look at things from another angle.*
- * *I learned the various forms to motivate the participants by means of all the strategies used by the facilitator during the course.*
- * *What a facilitator must do to get the best out of his work.*
- * *I learned to develop an attitude to improve on a continuous basis by producing imperfect work, trying to locate my errors and learning from my errors. Or, in other words, I lost (a bit) my reluctance to present work of which I know it is not yet perfect.*
- * *I learned...a new type of interaction between the educator and his audience: communicating systematically and permanently, using different media.*
- * *The kind of communication it was possible to have, with my colleagues as well as with the facilitator.*
- * *The importance of taking it on me to honor a written pledge in which the two parties engage and it is not just me who can become dirty.*
- * *I learned to give greater importance to the opinions of other people, even if they were apparently wrong.*
- * *Responsibility for work undertaken.*

It would seem that the totality of these statements does not require further argument to reach the conclusion that such anonymous observations by the students support the explanations so far suggested. Similar statements can be found in the part of the data base that refers to the ESMI-1 case. However, these are generally less frequent and not as forcefully worded as the above cited ones.

In addition to the above, and exclusively in the ESMI-2 case, two instructional events were used for unobtrusive data collection (Data Base Items 2.2.2.018 and 2.2.2.020). The first one was a small group discussion, with reporting back to the class, about ways to improve instruction. Students were asked to identify indicators of motivation, to describe a motivationally bad instructional experience they had gone through and identify what happened, do the same for an opposite experience, identify what to attend to motivationally in the instructional modules students were designing, and to identify different dimensions of motivation (the ARCS model had not yet been taught). The reported results again emphasize the environmental and facilitator related aspects mentioned earlier. Various students had chosen the ESMI workshop as an example of their positive motivational experience.

A similar conclusion holds true for the data collected, using a worksheet in which the students were asked to:

- a) list the main things done in the workshop to attain and maintain an adequate level of motivation
- b) list the various media used in that context
- c) mention what was avoided that otherwise would have detracted from the students' motivation
- d) what could still be done to improve adequate motivation.

Among the wide variety of possible responses to the prompts presented, 15 of the 21 respondents refer explicitly to the messages they received, while some of the others may have referred to them indirectly by listing things like 'the constant attention given to each student'. The results of the small group discussion, following individual responding to the worksheet, were reported to the class as a whole. Three of the four groups mentioned the motivational messages in the summaries of their discussion, the fourth group referred to "availability of the instructor" instead. The way in which some of the participants refer to the messages is of interest. One student called them "the words of the facilitator", closely reminiscent of one of the concepts related to the motivational messages, identified by one of the research assistants already at a very early stage of the research, that of "words of comfort". Another student says: "The 'mail' which every participant received, talking about the road already traveled and the part that had still to be gone, and what that meant", apparently referring to the use of the picture of an athlete on the cover of four of the messages, depicting it (it was not gender-specific) in various stages of progress of its run.

Particularly interesting are the things that were listed as having been avoided so as not to work against the motivation of the students. They emphasize all kinds of ways of publicly communicating with individual students concerning their progress made or errors found in their work or

behavior as students. Clearly, the way in which such publicly communicating with individual students had been done away with, was through the systematic use of the motivational messages.

In the same framework, it is reminded that the group of participants was very heterogeneous. This aspect is consistently identified as motivating. The fact that heterogeneity also encompassed managerial staff of the ministry, contributed further to enhanced motivation, both on the part of subordinate and directive staff. Had communication with individuals been public and honest, participation of directive staff would probably have been different, less real, and more symbolic. Alternatively, such staff would have had to be given a special treatment, which was exactly one of the things that also was identified by the students, at all levels, as important to have been avoided.

Observed reactions and spontaneous comments

Much of the information analyzed above was created as a direct result of different forms of planned interaction of the research team with the student population. Besides, other information, created spontaneously by the students, and registered only, thanks to the continuous, unobtrusive presence of particularly the two research assistants, as well as the lead researcher, provides further argument to underline the validity of the strategy under investigation. Such information has to do with what people said, e.g., on

receiving the first messages, that 'it was a shame that in order to produce them only a quarter of the provided paper space was filled with graphics and words', whereas never ever after such comments were heard anymore, or that, 'wherever you go, the messages will always get you'. Besides such more general statements, comments could also be more personal in nature, like this one, cited by the research assistants in their report: "When I received the message which said that it was necessary to do the readings, and when it was already late at home, I sat down, like an obedient little girl, and went on reading the book", or, this one, spontaneously written in the margin of one of the questionnaires, in addition to one of the solicited responses, saying that "In a normal case I am sure I would already have left the course".

But it also has to do with what people did. Messages were seen to be read, and often discussed, immediately after they were received, they were shown to close colleagues in case they were personal ones, not received by the other participants, they were shown to relatives, put in front of the student while s/he was working, to serve as a constant reminder or as food for thought and encouragement. They were also neatly stored away. One student had a whole collection of them in her personal handbag, others kept them in their conference files. They also resulted in acts of reciprocity. Messages were sent in return to the facilitator, using the same, or similar formats.

Besides these behaviors that reveal attitudes as regards the medium of the motivational messages, there were also behaviors believed to be caused by the messages. People found themselves doing things they had never done before, like taking work home, going to their offices on Sunday, not just individually, but in an organized group session, for some with the implication of having to travel for hours to reach the meeting place. Offices where the lights were always out at night, would suddenly light up like a Christmas tree (as e.g. photographically documented in Data Base Item 4.2.2.003). These people, the great majority of which had never touched a typewriter before, could be found struggling with a technology, included as one of the course obligations in order to prepare them for computer based design of instructional materials, typing very slowly lots of very lengthy documents (as can be derived from other photographic evidence, Data Base Item 4.2.2.005, and from scraps of paper like the ones on file as Data Base Item 3.2.5.002).

Incredulity resulted in the minds of some of the participating managerial top of the ministry, witnessing what was happening to their work environment, while knowing that they themselves were contributing to the change, and observing, in a reflective mood during the party following the graduation ceremony, making comments to the representative of the funding agency, that they had never thought it would ever be possible that people in

the ministry would work outside their regular working hours (Data Base Item 5.2.1.259).

The description could be endless. The following chapters will provide ample opportunity to go back to these rich sources of information incorporated in the data base.

Influences on the instructor

It should have become clear by now that the motivational messages constitute a complex medium, perhaps more complex than any of the other media normally present in an instructional media-mix. Because of their intentionally high degree of interaction with all the other media used, they provide the cement that builds a *motivational system*. The management of that motivational system is what is primarily at stake in the strategy previously coined the *clinical use of motivational messages* (e.g. Visser, 1988a).

Being an overall interactive medium, it is natural for the instructor to be one of the media experiencing the influence of the messages, even though, or perhaps exactly because, it is the facilitator who is instrumental in designing and distributing them. The research assistants draw attention to this aspect in their independent report (Data Base Item 5.2.5.002) in their seventh conclusion, saying that, in addition to the other ways in which the motivational messages have shown to be important, as analyzed in their report, there is "the

importance of the messages in keeping the facilitator in constant motivational equilibrium and constantly convinced as regards the work he is carrying out". Quite a few of the entries in the researcher's field diary (Segment 5.2.1 of the data base), as well as various of his contributions made during the research debriefings (Segment 1.2.1 of the data base), support this conclusion. In the following two chapters this issue will be explored in greater depth.

Post instructional interviews

A selection of ten students, from all participating organizational entities, and including the full range of possibilities of success and failure in the course, were submitted, with their written consent, to taped post-instructional interviews. These interviews were of a structured nature, following the model presented in Appendix 6. Basically, six questions were asked, the first three of which had no explicit or even suggestive bearing on the motivational messages. They did, however, provide an opportunity for the interviewee to talk and to bring up, if he or she felt like doing so, the motivational messages spontaneously, before in the fourth question an explicit prompt would be given to do so.

Seven of the ten students interviewed brought the motivational messages up before the explicit prompt was given, either by referring to the system of motivational communication in its totality, or by mentioning specific

instances of its use. The three who did not bring the topic up spontaneously included two who had done so quite consistently in other, less awareness provoking situations, like in small talk, or in making speeches at a party. When asked explicitly, all interviewees agreed that the "little notes" had been an important factor in determining the success of the course, not only for them, but also for their colleagues. Again, the following two chapters will provide an opportunity to revisit this segment of the data base.

AN INTERMEDIATE CONCLUSION

Finally, going back to the original question: *Did the motivational messages work in this instance, and did they work in a way similar to what has been the case in the ESMI-1 workshop?*, the answer, in the light of the above evidence, should be: *Yes, they worked in a way that can be explained within the context of a general interpretative framework that encompasses the two cases.* That interpretative framework served as a basis for the above given rationale. One of its most particular features is its reference to the concept of *motivational systems*. The way the motivational messages were looked at in the previous study (Visser & Keller, 1989) should, in the light of the new, more extensive, and particularly more varied, evidence now available, be classified as having been too narrow, too exclusively concentrating on the medium as an isolated

thing, rather than on its functionality within a context. The following two chapters have been included to shed further light on the contextual meaning of the clinical use of motivational messages.

RESULTS AND DISCUSSION - PART III:

QUESTION 2: THE ENVIRONMENTAL ISSUE

THE ENVIRONMENTAL QUESTION

In the previous chapter I have (re)defined the *clinical use of motivational messages* as a strategy using a medium of a highly interactive nature, which means that its functionality should be analyzed also from an ecological point of view. The current chapter intends to attend particularly to that interest.

The environmental question poses itself at two different levels, that of the interaction between the medium and the persons acting within the instructional environment, and that of the interaction of the medium with the environment as such, i.e. the instructional habitat, jointly created and managed by those same persons, by the motivational messages, and by other components that are part of it. At the former of these two levels, there are two different types of actors. The first type is constituted by the learners, incorporated in the instructional environment, the second kind refers to the person whose role it was to take the initiatives that would most likely result in the students' learning, i.e. the facilitator. That splits the area of interest of this chapter in three sections: one dealing with what happened at the interface between messages and learners, the other one asking the same question as regards the interface between messages and instructor, and

finally those things that reflect on the message-environment interface. The totality of these three concerns reflects the content of the second research question formulated in the *method* chapter of this study: *How and why does the clinical use of motivational messages work?*

In connection with that question, and related to each of the three areas of concern, a series of propositions was formulated to guide the researcher in the process of collecting, analyzing, and interpreting the data. In the present chapter these various propositions will be revisited, and the information available in the data base will be perused in order to substantiate or insubstantiate them.

THE MESSAGE-LEARNER INTERFACE

Six different propositions were formulated in connection with the interest to explore the message-learner interface. They will be dealt with in the same sequence as the one in which they were presented in the *method* chapter. It should be kept in mind, though, that this particular treatment is given only in the interest of clarity of analysis, and not as an expression of what would be an erroneous conception of the world, that of a whole which would be thought of as the simple sum of its constituent parts.

Proposition 2.1.1: *Motivational messages help learners assess their progress*

The possibility for the learner to see and experience how far she or he had got, and, consequently, how much was still ahead, and how successful s/he had been so far, and what would be required to reach the following intermediate goal, and, eventually, the final goal, has received particular attention in designing the messages and in distributing them to the students. The general idea was expressed graphically, using the image of a running athlete, shown at various stages of completing his course, and otherwise this aspect was very much present in the verbal content. Students were provided feedback in a sense wider than the traditional one, i.e. not just knowledge of results, but particularly prompts that would help the student in interpreting his or her results within an interpretative framework the student would gradually start building regarding his or her learning experience, and which might be different from the traditional interpretative framework forcedly installed by the school system.

The data base provides ample evidence that this message was properly communicated and that students did indeed succeed developing the referred interpretative frameworks commensurate with their own abilities. It allowed some of them to make unconventional decisions. The following instances are cited as mere examples.

"It is necessary to err", an advice given by the facilitator which served for me as a great motivation. I have this advice constantly in mind.

These are the words of one student, contained in a message (Data Base Item 2.2.1.087), using the format of most of the "little notes" that were distributed, addressed to the facilitator at the end of the course, after the student had completed all her work, meeting perfectly all deadlines, despite her going astray from time to time. In one of her weekly questionnaires, identified in this case because of circumstantial evidence, she listed as one of the things that had demotivated her the fact that her first report had been returned to her, after she had been the first one to hand it in, because the facilitator had found it to be incomplete and judged she would be able to improve it.

This change in attitude as regards how to look at one's own successes and failures, is similarly apparent in a document with a different handwriting, quoted already in another context, i.e. that of the end-of-course questionnaires (Data Base Item 2.2.7.015) in which students were requested to list the five most important things they had learned. After having mentioned that (s)he succeeded mastering the ESMI methodology, the second most important aspect listed by one student was: "I learned to develop an attitude of continuous improvement by producing imperfect work, locating the errors and learning through these errors. In other words, I lost (a bit) my reluctance to present work of which I know that it is imperfect".

Yet another case is most interesting. It regards an already mature adult learner, only slightly younger than the facilitator, but looking much older, and in the local cultural context seen as "the old man", with all the respect that is part of the connotations of that expression. He likes to use every learning opportunity there is, and was therefore quite satisfied with his being in the course. Nevertheless, he was not a very strong learner, and information about his professional record shows numerous occasions where it had been difficult to let him do work that would satisfy his supervisors. One of the research assistants knew him well. His frequent failures to meet the expectations of his environment had installed in him an attitude to withdraw, rather than fight.

It should be noted that this description of the student in question was established in the research debriefings, long before any problem as regards the students performance in the course started to surface. His performance in the workshop had indeed been satisfactory as long as the study of the conceptual framework was involved. However, as soon as it came to application of the learned concepts, there seemed to be a barrier the student was unable to pass. The grade he received on his first report was so low that the facilitator decided to write him a message that would encourage and allow him to withdraw, without loss of self-concept, from the course. In the

same message it was left up to the recipient to further discuss his situation with the facilitator.

In the work session following this message, the student presented himself to the facilitator quarter of an hour before the session began. He had read the message, he said, and thought about it. Although he recognized that he would not be able to reach the established goal of the course, he had decided he still wanted to continue, because he himself was learning a lot, even though that might be less than would have been expected of him according to the course planning. So he carried on.

In that same session, in the opening move, students were asked to volunteer in telling their fellow students about how they had experienced their initiation into applying what they had learned. This, as seems to be common in such circumstances, met with the usual initial silence and avoidance of eye contact. After some time, however, one student stood up. And it was exactly the one who would have been least expected to do so, the same person who had recognized his failure and inability to cope with the course goals, but who had opted to continue because he could still learn. He used the opportunity to explain to his colleagues in detail what his problems had been, how he had been unsuccessful, what this had meant to him, and how he was determined to continue to pursue his *personal* goals (Data Base Item 1.1.2.013).

The general idea of this effort being one marked by milestones, and a proper finish, as well as perspective of continued concern that would go beyond the finish, quite clearly got across. The graphic symbolism of the athlete was taken over by various students in communicating their feelings to the facilitator. Verbal references are also abundant, the last one having been reported in the last entry of the researcher's field diary, relating to what he was told by one of his students present at the airport, shortly before he was to board the plane: "This race will continue".

Proposition 2.1.2: *Motivational messages remind learners of goals and intermediate goals*

The way goals and intermediate goals were communicated in general has already been referred to above. More specifically, many of the messages, as can be judged from inspecting Segment 2.2.1. of the data base, made specific mention of events students were approaching that were considered to mark the closure of important parts of the workshop. Besides such a countdown, it was also appropriate, at times, to reinforce the awareness of by how far a student was missing a previously planned deadline, and help the student replan his or her work.

Students make frequent reference to the *high degree of planning and organization* present in the course. It is not new that courses are planned, but

the degree to which students make reference to that aspect shows their enhanced awareness of it. The motivational messages had apparently succeeded to get that message across. They allowed the students to look at the given planning as something they themselves had undertaken to accept as a guiding framework. Of particular importance in that respect had been their signing the contract at the beginning of the course. In doing so, people were observed to be consulting their agendas, comparing due dates on the Gantt chart, which they had meanwhile received, with other commitments they already had. In conformity with Conclusion 3 of the research assistants' independent report, the motivational messages were a way to constantly reinforce the joint undertaking by participants and facilitator to reach the goals of the workshop.

Specific references are made by students, particularly in the context of the end-of-course evaluation, to the significance of their having signed the contract. One of these references has already been cited earlier. A few more are quoted below (Data Base Item 2.2.2.025).

One student writes about the contract, saying that it was *important to reinforce the planning aspect. On the other hand it unleashed in the student the will to honor the pledge signed with the facilitator. The will to honor the pledge was highly motivating. The contract also showed that one could*

count on the support of the facilitator, something that could make "walking" through the course less thorny and more likely to succeed.

And another student:

A pledge is always a promise and an honest citizen is and should always be a slave of his word, such that what has been promised is a debt. If we had not entered into these pledges, few people would still be in the course, particularly when it became increasingly more demanding in conjunction with the work at our institutions.

Yet other students refer to its functioning as "an 'alarm' in case one of the participants would feel like abandoning the course", or that "it was important, because it helped us 'in difficult times' not to break the pledge".

It should be noted, however, that not all students were equally positive about this particular medium. Some thought it was not necessary, as there were other motivational factors present in the course, or because adults would - or should - not need it, but the fact that every component gets different responses from different people is a strong reason to not rely on just one single medium. The contract did apparently work for a special student who had participated in the course under particularly disadvantageous circumstances. He writes:

It was able to mobilize me to remain in the course, despite the difficulties surrounding my participation. If it hadn't been for the pledge, perhaps I might have felt like trying to quit.

While the contract functioned as the great overall reminder, the Gantt chart operationalized it. "It allows you to analyze your progress with regard to the existing planning", writes one student, and another one: "It helps to be systematically aware of where one finds oneself, and to know the activities that were still to follow". Yet another student adds to this: "It also helped having a view of the course in its totality". It also "served to create a spirit of organization and planning among the participants", it "reactivates motivation", and it ensured that "we remained always informed about the activities to be undertaken and in what sequence they should be carried out", are opinions of other students.

Again, like with all media, the way they are appreciated varies across participants. For those students who were constantly unable to meet the planned deadlines, looking at the Gantt chart must have been accompanied by feelings of frustration, as some students indeed mention. But despite such frustrations, it could help them, finds another student, as

it created within the participant the will to overcome him- or herself the difficulties. For those who succeeded to carry their tasks out in accordance with the Gantt chart, this should have given them the satisfaction to rediscover that

they were able to work in a rhythm more demanding than the one they routinely follow.

Most specific in the sense of being reminders were, of course, the regular messages. The following selection of observations shows how they were perceived by the students in that respect (Data Base Item 2.2.2.025).

- * *They awakened in the student a constant attention as regards the way the course was progressing.*
- * *They kept the participants always informed about all the course activities, thereby avoiding the habitual excuses of 'I forgot, I didn't remember'. They made the participants responsible and reactivated their motivation.*
- * *They made that we would not forget our obligations.*
- * *They stirred up the participants so that they would never forget to carry out the activities to come.*
- * *They served as a way to remind the students of the work they should do.*

Proposition 2.1.3: *Motivational messages allow learners to correct their own study behavior*

Study behavior of most students was inappropriate. Practically all of them, with very few exceptions, were the product of an educational practice that largely encourages rote learning, and puts a premium on the ability to reproduce verbal statements related to concepts and rules, rather than on the

ability to apply the framework in which these concepts and rules are embedded in productive and creative ways. Students are supposed not to interact creatively with their teachers or the instructional environment (e.g. Data Base Item 3.2.1.025), despite the fact that verbal statements by educational authorities advocate at the level of discourse different kinds of attitudes.

In the schools, students are being talked *at* rather than talked *with*, let alone that they are encouraged to talk with each other. Besides, their main, or often exclusive, sources of information are teachers, generally undertrained. Since 1983 an effort is being undertaken by the Ministry of Education, in the framework of the implementation of the National Educational System, to introduce textbooks in the schools, on a year-by-year basis, starting with Grade I. Economical and security problems limit the success of that effort, but none of the students of the ESMI-2 workshop could have benefited from it, considering their age. Quite a few of them are teaching classes themselves, particularly at night, having to cope with the problems outlined above.

There is no doubt that this course was perceived as something entirely different from their previous experiences and as being in disagreement with their initial expectations.

In the initial research debriefings this aspect was identified as one of the greatest problems students were encountering. They suddenly were

supposed to be studying in a very much autonomous way, using a book that would not be explained to them, but the content of which they would be required to be able to discuss in class, with their colleagues and not necessarily with the facilitator, and they would be required to apply their newly acquired knowledge in a real-life context.

In the end-of-course evaluative discussion much attention focussed on *the book* as the big problem that had plagued the students. Initially the nature of the problem remained hidden behind the façade of the foreign and unknown language in which it had been written. Though this had certainly constituted a great obstacle, it was not a major one. The one person in the audience who had Spanish as a mother tongue, but whose cultural heritage was relatable to that of the Mozambican participants, could testify that for her the book had been equally problematic. Test results obtained are in conformity with that statement. Only towards the end of the discussion it became clear what the real problem had been, and it then was stated in terms that were very similar to those in which it had been formulated during the initial research debriefings.

The information contained in data base leaves little doubt that students have gone through rather dramatic changes. The students who were selected to take part in the post-instructional interviews (Segment 1.3.1. of the data base) all mentioned that this course had been very different from their

earlier experiences. They usually agree that their behavior, and that of their colleagues, has changed during the course. Not always are they able to specify their changed behavior in great detail. References are made to improved discipline and being better organized, to having seen the benefits of working in group settings, to being more systematic, and more serious, to taking different attitudes towards the product of their work, no longer looking at it as something final, but rather as something that can always be improved upon, and to being sensitive to alternatives. One student reported changes in his behavior as a teacher, particularly as regards ways of approaching his students.

Observations made by students about the most important things they had learned in this course, cited earlier, in response to one of the end-of-course questionnaires (Data Base Item 2.2.7.015) converge with the data collected during the post-instructional interviews.

Observed and reported behavior show dramatic changes. This is particularly clear for Entity P, which the researcher had found during his first encounters with that institution, in the period preceding the course, to be highly undisciplined and, at least among part of its staff, showing an almost complete lack of interest to engage in any work at all (Segment 5.2.1. of the data base, particularly the earlier entries). This changed completely over the

period the course took place, resulting even in changes in the physical environment.

People who had never done so before started to work at home, and even reported enjoying spending their "free" Sundays meeting with each other in the regular work environment, in order to jointly work on problems encountered in carrying out the course assignments.

It is likely, in view of the multi-faceted conception of the instructional process of the course, that various components of the instructional strategy have influenced the students in changing their behavior. Various citations earlier in this chapter indicate that students attribute particular instances of having corrected their behavior to the influence of the motivational messages. In view of the time it takes for such changes to consolidate, in comparison with the duration of the course, it is not likely that students would be very explicit about the overall changes in their behavior. They were still in the initial stages of gradually bringing about such changes. Yet the following observations by students in response to the questionnaire evaluating the instructional strategy of the course (Data Base Item 2.2.7.014) are of interest. They state that the motivational messages:

- * *allowed to review at any moment some aspects of our behavior with respect to the course - punctuality, assiduity, responsibility, and other extremely important aspects*
- * *influenced attitudes*
- * *gave me the courage to continue when I was already desperate*
- * *combated tendencies 'to let things go'*
- * *helped to step up the pace of work in carrying out some of the activities*
- * *they were fundamental to keep people working quite intensively during more than two months! I hesitate to classify them with a 5, but they come close.*
[The respondent had attributed a 4 on the 5-point scale].

Even though the motivational messages are assumed to have contributed only in part to the process of change of study habits and attitudes, together with other components of the instructional strategy, it is interesting that a considerable number of students refer explicitly to the messages in the context of these changes. That in fact other components of the strategy contributed as well to these changes can be concluded from the appreciation they received in the end-of-course evaluation. It is once more emphasized in this context that they should be looked upon as components of a complex motivational system in the management of which the motivational messages play an important role.

Proposition 2.1.4: *Motivational messages allow learners to interact with the instructor so as to enhance their perception of control over their own study process*

From the analysis with respect to proposition 2.1.3 above it becomes clear that students did change their study behavior. This implies that they put themselves in control of what they were doing. As *controlling your life* is not the same as *perceiving that you are controlling your life*, different kinds of statements and observations should be brought to bear upon the contention contained in the present proposition.

A perusal of the data base in that respect brings out evidence that is less convincing than what was found in connection with the previous propositions. This may be assumed to be related to the state of change in which students found themselves. They were in most cases just starting to get on their own feet, which is not particularly the stage when one feels very much in control. Yet, one student reports (Data Base Item 2.2.7.014) that the motivational messages "gave us confidence". Another student, one who was in fact conscious of his own study behavior, reported in the post-instructional interview (Data Base Item 1.3.1.010) that, after he had been away on a mission abroad for about a month, felt he had lost contact with the course. He was seriously considering to give up, particularly also because of other tasks he had to attend to. Among his mail, however, he had found all the messages

that had been distributed during the period of his absence. First it had given him a shock, and reinforced his intention to give up. But then he had started reading them, putting them in front of him on his desk, sorting them in order. Doing that had brought him back in the course and in control of what he had wanted to accomplish through his participation in the course. He did indeed complete the course successfully.

Proposition 2.1.5: *Motivational messages prompt learners to optimize their time-on-task*

As has been pointed out before, students do indeed report, and have been observed, to be using their time more efficiently for the purpose of their learning. They refer to higher degrees of organization and planning, and to the use of time they would normally not have dedicated to the purpose of acquiring new knowledge and skills. Changes in behavior brought about by participation in the workshop has in many cases spilled over into the regular work environment. One of the participating national directors reported that her staff for the first time had been asking for planning agendas.

In order not to become redundant, no more specific quotations will be added to the ones already cited earlier, part of which have an obvious bearing on the issue under discussion.

The fact that students did improve the ways in which they were using their time does not mean that they reached optimal levels of performance in that respect. They were merely improving, and sometimes dramatically so, their time management behavior as compared to the way they had been using that resource previously. They do attribute that change, as can be seen from the relevant quotations, at least in part to the motivational messages.

Punctuality in terms of class attendance being one aspect of time management, particular reference should be made in this context to the rare phenomenon in the context of local practices, that right from the beginning, the students started to appear in time for class, and often arrived earlier, so as to be sure not to miss the first minutes, or to be able to use the extra time to do some more work, which they were afraid would run the risk of being interrupted, had they remained in their offices, or simply to discuss course related issues with their colleagues or with the facilitator.

When, at a certain moment, some relaxation of the installed discipline started to appear, the combined action of in-class discussion, which is by nature directed at people who are present and who are therefore the least appropriate audience for such interventions, and, more appropriately, communication by motivational message (Data Base Item 2.2.1.057), could quickly correct the situation. The degree of punctuality and assiduity

attained surprised both the participants, and their colleagues who did not participate in the course.

It should be clear that some basic conditions should be there for communication about such issues as punctuality and effective use of time to be effective. One of them is that the initiator of the communication should him- or herself model the desired behavior. This is expressed by one student, who used the extra space provided on the instructional strategy evaluation questionnaire (Data Base Item 2.2.7.014) to add two more items to the 16 that were already there. They are both rated 5 on the 5-point scale and the following comments are added:

17) *Punctuality and assiduity of the facilitator.*

This made that no time was lost, i.e. it facilitated a good distribution of the time and it was a good example for those who did not succeed to arrive in time. It is quite possible that this caused people who were late to try hard and arrive in time and avoid that others would lose time or be turned away from the main issue.

18) *The fact that there were no "improvisations" in the course on the part of the facilitator, everything was very well programmed.*

This ensured that the planned activities were carried out at the proper moment, without rushing through them, without programs that were hurriedly

fabricated at the last moment. There was much organization on the part of the facilitator as regards his activities, and much discipline as well.

A lengthy quote, which should certainly satisfy the facilitator, particularly as there are more such comments, but presented here to emphasize the need for thinking about motivation to be done at a system level. No one single component would probably have been sufficient to accomplish what was shown to have been possible through the combined presence in the strategy of different components. Had there been no appropriate communication about the issue, the example of the facilitator might have fallen, as so often happens with good examples, on deaf ears.

Proposition 2.1.6: *Motivational messages provide satisfaction, particularly in that they help learners develop positive feelings about their accomplishments and reinforce their successes*

Interpretative feedback was one of the features that characterized the process of motivational communication. Students were encouraged to think about their accomplishments in terms of what it meant for them. No specific norm-referenced statements were made, and criterion-referenced information was provided solely for the purpose of helping the student to judge his or her own behavior against the background of existing personal aspirations.

One student, after having referred to some of the special features of the motivational messages, then goes on, referring to them in general (Data Base Item 2.2.7.014), simply stating:

I think they were very rewarding.

Another student states in that respect regarding the motivational messages:

The major part of them were motivating, they gave us confidence and satisfaction about the activities already carried out and those that were still to be carried out.

Satisfaction is shown here to be something that does not only work in retrospect. It also has a feedforward effect.

More specifically as regards the interpretative feedback function of a large part of the motivational messages, yet another student comments:

The feedback allowed the participants to know the results of their work and reflect on these results so as to locate their shortcomings and study ways to overcome them.

The analysis of this comment converges on the conclusion already drawn above. Satisfaction is not just a conclusive feeling, it is very much also a driving force towards future activities, based on what one student experienced from reading the feedback messages: the creation of "expectations of success".

Extremely important, because that way we could see what we had been able to accomplish, following which we could review the criteria and abilities with which we had had difficulties in reaching the goals,

is the opinion of one more student as regards the interpretative feedback role of the messages.

Satisfaction appears to be derived also from the messages in more indirect ways. The following quotation of one student's opinion clarifies how.

The feedback also functioned as a stimulus and motivation, and it programs the student in the sense that it confirms the student's achievements in some areas and indicates to what other areas more attention and effort should be dedicated. It demonstrates to the student the interest and dedication of the facilitator, and his attention to the aesthetics of information. All this, so that the student sees the importance the facilitator attaches to these products of the students' work, and that, in the same way, he is trying hard as well.

That the intention of the messages to allow students to interpret their results in a way commensurate with their own abilities, and their own dynamics of developing their abilities, has been successful, is suggested by a comment like the following:

Extremely important, particularly as the facilitator always took into account the limitations and possibilities of the students.

Why motivational messages?

The question may be asked, reviewing the above analysis, why the apparently successful communication should have been handled through the medium of motivational messages, and not in the context of direct contact between the facilitator and his students. One aspect is the following (Data Base Item 2.2.2.025):

They [the motivational messages] were an excellent way to keep the participants and the facilitator in touch with each other, and that way all could feel the same treatment, the same attention, the same demands made on them by the facilitator, something that would not have occurred, had the communication been verbal.

The fact that participants represented a wide range of levels of responsibility and hierarchically differentiated positions was a particular circumstance of the two ESMI workshops, but particularly the ESMI-2 one, that could have become a complicating factor if other types of communication had been used, whereas now the same circumstance has often been referred to as motivational.

Another important, unexpected, reason for the use of motivational messages instead of (part of) the direct communication between facilitator and participants, was revealed by one of the students during the post-instructional interview (Data Base Item 1.3.1.009). She referred to the high

quality of the messages and the fact that they had resulted in attitudinal changes. 'They were not simply pieces of paper; they were like a conversation'. Had the communication been of a more formal nature, it would not have had the same impact. 'And what if it had been direct, face-to-face?', the student was asked. 'That would also have been different. People could have hidden themselves.' (They could indeed. On one occasion, when the researcher was visiting one of his research assistants on the 18th floor of the building that houses the ministry, the news that he was on his way had reached the research assistant in question before the elevator could arrive.) But why, one would ask, would students have hidden themselves? 'This communication was a nonaggressive one', she says, and goes on to explain that people could have left the course simply because they would not have been able to cope with the direct personal confrontation (perceived as aggression) regarding their shortcomings. Having the message in hand, people could administer it to themselves the way they found worked best for them. It could be put away, temporarily, and then be looked at again at a moment when they were ready for it.

Apparently, you could probably even make them suit your taste or mood. Some people had a couple of messages as their regular companions. They were sitting on their desk. And the display might change over time.

The evidence presented above quite strongly supports, though in a differentiated way, the six propositions formulated in relation to the question how and why the motivational messages worked for the students. But did they also have an effect on the teacher?

THE MESSAGE-TEACHER INTERFACE

Proposition 2.2.1: *Enhanced teacher awareness of students' problems*

Proposition 2.2.2: *Enhanced motivational in-class behavior of the teacher*

Two research propositions were formulated as regards the possible ways in which the teacher him- or herself could be affected by using the motivational messages as part of the instructional strategy. For the sake of convenience they are restated here:

2.2.1 Motivational messages work because the process of their design and delivery helps the teacher to be more aware of the students' actual and potential problems, so that he can adjust the instruction accordingly.

2.2.2 Motivational messages work because they prompt the instructor into adopting a continuous mode of being motivational, which influences his in-class behavior as a motivational facilitator, such that the students basically acquire their desired disposition to learn through their immediate

interaction with the instructor, rather than mediational through the motivational messages.

In perusing the data base with regard to the above propositions, they are taken together here. In principle there are three possible reactions to the two propositions, i.e. both of them apply, none of them applies, or only one of them applies, in which case it would have to be established which one.

While the data base was being constructed, the research assistants had special instructions to be attentive to any information that would permit substantiating or insubstantiating any or both of the above propositions. Thanks to their contribution to the data base, as well as through the process of interaction of the research team as a whole with the subjects, it has been possible to gather evidence in support of Proposition 2.2.1. It has not been possible to find such evidence regarding Proposition 2.2.2. Quite to the contrary, some information could be obtained that would build towards an argument to deny that the in-class behavior of the facilitator was any different from what it had been in other circumstances, where no use was made of the motivational messages.

The instructor had been known by both research assistants in different instructional contexts. For one of them, that experience had even been a relatively recent one. He was perceived by them as not displaying an in-class behavior which could be interpreted as more motivational than what it used

to be. They even found that initially his performance was below their expectations (e.g. Data Base Item 5.2.4.005), and that he was less in control than he usually was.

In order to get this clearer, yet another source, independent of the research assistants themselves, was tapped. Two more students, both of Entity P, had been the instructor's students on earlier occasions. One of them was the student mentioned earlier who was participating in the workshop despite his not having received salary for three years. His participation had been irregular, so that he could not be expected to have a complete view of what was going on in the regular class sessions. Besides, at the time the particular investigation was being conducted, it would have been difficult to contact him unobtrusively. The other student, however, was participating regularly, and one of the research assistants had already established a sufficiently close contact with her that would allow some unobtrusive questioning to take place as regards her perception of the instructor's in-class behavior five years earlier and now. Two discussions were held with the student in question, one to follow up on the first one after it had been determined during the research debriefing that some more detail might be obtained, but in both cases the student transmitted the opinion that the instructor was just the same as always. Of course, he had not used those little notes on the earlier occasion when she had known him, but that did not really

matter. 'If it had not been the notes, he would certainly have come up with something else'. This opinion reported by the research assistant in question is consistent with what most likely the same student (as identified by handwriting and correspondence of content with other statements made by her) wrote on her questionnaire evaluating the instructional strategy components:

The 'mail' constituted somehow part of the motivation, but not totally. Without it the course could have developed normally, considering that the facilitator is endowed with a pretty motivating strategy.

In conformity with that opinion she rated the importance of the messages 1. It should be noted, though, that in the post-instructional interview (Data Base Item 1.3.1.003) her comments on the value of the motivational messages reflected an opinion that largely exceeded the numerical scale value attributed by her on the referred questionnaire. Also, her ratings of motivational and instructional importance of the medium *motivational messages* (Data Base Item 2.2.2.025) shows a higher rating.

The student in question may have been right in contending that a good teacher - a profession which she had engaged in herself for a number of years - will always find ways to solve problems. But the motivational messages were exactly one of those things the instructor in question had found and it should therefore not be separated from him.

The opinions expressed by this student, and confirmed by the research assistants, are in perfect agreement with the interpretative framework hypothesized earlier in this study. The medium, particularly such a highly interactive one as the motivational messages, should not be looked upon in isolation, but in the multi-media context of a motivational system within which it is employed.

The research assistants express this idea in their independent report (Data Base Item 5.2.5.002) by saying:

In a situation of face-to-face teaching in which the participant finds that the facilitator is arrogant, incompetent, unable to associate in a natural and constructive way, and disorganized, we don't think that an adult and experienced participant could be encouraged and induced by such a message to go on [late at night] with her readings. We are of the opinion that that is only possible in a situation in which the producer of the messages possesses what we would call acceptable knowledge and human qualities (p. 6).

As regards the former of the two research propositions under discussion here, there is indeed evidence that the use of the motivational messages influenced the teacher.

In the first place, the instructor himself reported to his research assistants, following a remark by one of them, that he had never before been standing in front of a class of approximately 30 students whom he knew all

by name from the first occasion onward. Quite the contrary had been the case. At the end of a full semester, or sometimes even longer, he would still have been struggling with what he thought was some kind of memory problem.

As a matter of fact, the question of knowing names is a superficial expression of being aware of much that is hidden behind those names. That aspect was also different. Every student corresponded with a mental picture in the mind of the researcher. This came in handy during many of the research debriefings (Segment 1.2.1 of the data base), in which the lead researcher was often able to identify students on the basis of incomplete descriptions given by the research assistants.

The research assistants conclude in their independent report (Data Base Item 5.2.5.002) that the messages played an important role in keeping the facilitator in constant motivational equilibrium and consciously convinced as regards his work.

One of the participating invitees concludes in her evaluation of the media importance (Data Base Item 2.2.2.025) that the motivational messages "constituted an excellent means to maintain communication between participants and facilitator".

Another participant characterizes the messages, in the post-instructional interview conducted with him (Data Base Item 1.3.1.007), as "an

efficient means to stay in tune". He refers in that connection to his finding that 'they always arrived exactly in time, for each in accordance with his or her needs'. Other participants express themselves in similar terms. The research assistants (Data Base Item 5.2.5.002) report the opinion of one of them, collected during a small group discussion, in the following words:

The mail / little notes represent a word of comfort, i.e. no one feels left alone, a message which calls for a constant renewal of the promises made and for a strengthening of energies in the full pursuit of the course objectives, as on the various occasions on which they are distributed they coincide with the worst moments of motivation in our midst.

Such a coincidence of messages with felt needs of the participants could of course only happen if the facilitator knew the participants, and particularly their developing reaction to the instruction, in a detailed manner, and this was indeed the case.

It is probably no exaggeration to claim that the use of motivational messages most fully provides the teacher with a role which, according to what has long been advocated by instructional designers, is more properly that of the teacher than what s/he traditionally is expected to do, i.e. transmitting information. In the case of the present study it was found that an instructor, perhaps not naturally inclined to that role, was able to adapt

himself to the demands of such a new situation. The research assistants describe their perceptions in that respect as follows (Data Base Item 5.2.5.002).

The team which participated in the research knew the facilitator well enough to see him as a rather reserved person, i.e., he was not very much used to the type of conviviality of the Mozambicans. However, during the course we found that he adapted himself very rapidly, which allowed him to get involved and to get to know the world of the participants better.

They consider that the metamorphosis should be attributed to the act of producing the messages, as, because of their nature, in order to produce them, "it was indispensable to know the audience very well, in order to better be able to support them during the course by means of the messages".

They add to the above that such knowledge also allowed him to be flexible and adaptable as regards the implementation of the program of the course, which was indeed a feature frequently referred to by the students in their weekly questionnaires as contributing to their motivation.

They finally consider that the positive reaction of the participants to the messages should have enhanced the facilitator's awareness in preparing his regular classes, the open sessions he conducted, and the messages he distributed. This should also have had a positive effect on the way he guided and provided help to the individual participants. "In short", they say, "it

increasingly reinforced the pledge he had made to facilitate the course". In the latter connection it should be reminded that the contracts signed at the beginning of the course were agreements between two parties, the student as well as the facilitator.

Now that it has become clear that the motivational messages are likely to have had an influence not only on the participants, but also on the facilitator of the workshop, the question may be asked whether in the wider environment their influences could be felt as well. The fact that from a certain moment onward, reciprocity started to occur in the motivational communication, interacts with both the teacher and the environment.

THE MESSAGE-ENVIRONMENT INTERFACE

Proposition 2.3.1: *Direct enhancement of the instructional environment*

Proposition 2.3.2: *Indirect enhancement of the instructional environment*

Two research propositions were formulated as regards the message-environment interface. They were:

- 2.3.1 Students and instructor perceive themselves as being jointly involved in the creation of an overall instructional environment (consisting of such things as physical facilities, instructional resources, patterns of social interaction) and that environment is enhanced by the incorporation of the motivational messages.

2.3.2 Similarly as in the previous proposition, the instructional environment is enhanced, though not in a direct sense, through the incorporation of the motivational messages as such, but indirectly, through consequences of the motivational messages. This may lead to the introduction of additional components in the instructional environment, or to a change in meaning of some of the components that are already there. It may for instance mean that as a result of the messages social interaction patterns change, or that existing interaction patterns are used for other purposes. This would e.g. be the case if existing personal or professional relationships would become the basis for jointly performing learning tasks.

An inspection of the data base in the light of these two propositions shows evidence that environmental changes did indeed take place during the course. At Entity P such changes could be most dramatically noticed. This should not be a surprise, considering the environment encountered there by the researcher upon his entering the field, long before the course started. Some changes in the physical environment have been photographically documented (Data Base Items 4.2.7.001, 4.2.7.002, 4.2.2.001, 4.2.2.002, 4.2.7.006, and 4.2.7.008). An environment that radiated disorganization and lack of interest, apart from an extreme lack of resources, rapidly changed into one in

which even outside people found pleasure to work. Parallel verbal reporting as regards these changes can be found in the researcher's field diary and his initial consultancy notes (Segments 5.2.1 and 5.2.2 of the data base).

Also patterns of social interaction changed greatly. The course started with a large group of students which was totally heterogeneous. The participating entities, though belonging to the same ministry, had very little interaction with each other. Almost no one knew any colleagues from other entities, and in some cases people hardly knew their colleagues from the same entity.

Seating configurations during the first class sessions reflect uneasiness, people holding on to their own territory, having no interest in entering into that of others, and less so in having others enter into theirs. Comparing photographs of these earlier class sessions with the ones that were held only a few weeks later, shows marked differences (Divisions 4.2.1. and 4.2.2 of the data base).

There is ample photographic evidence in Division 4.2.7. of the data base related to the psycho-social environment of the course, showing how participants reacted to, and actively participated, and often took the lead in, a variety of activities that were in various ways brought about by, or related to, the course procedures. They very clearly show the absence, even on such spontaneous occasions, of any tendency for people to remain in their own

little circles or restrict themselves in their contacts to those people they already knew.

On different occasions, also, students would engage in activities of enhancing the environment with verbal or graphic expressions related to the course content and the motivational communication process, producing posterlike displays expressing ideas that had been created during the workshop or ideas that had come up in reaction to it (Data Base Items 4.2.7.037, 4.2.7.081, and 4.2.7.082).

As a matter of fact, the management of instructional resources was the prime responsibility of the instructor, who, according to the final evaluation of his performance (e.g. Data Base Item 2.2.2.025) carried this responsibility out in an adequate way. As far as students could participate in that process, they took an active and voluntary part in it, being always helpful in preparing the conference room for class sessions, caring for the resources distributed to them, and willing to share them with others when they were scarce.

Also changes in the environment as referred to in Proposition 2.3.2 could be noticed, particularly as regards the joint undertaking of learning tasks by students pertaining to entirely different entities and of diverse socio-economical, cultural, and ethnical background. Such collaboration had been specifically encouraged through the motivational messages, sometimes by indicating to people who did particularly well that they had placed

themselves in positions from where they could contribute to the success of the workshop in important ways by interacting with their colleagues, or else by suggesting to others, who fared less well, that they might profit from their interaction with other sources, including their colleagues. It was avoided, though, to suggest any specific matching of students. Results obtained on data collection instruments both during and at the end of the course show that, after this type of interaction started to take off, it became a motivational factor in itself.

In the same context it is interesting to note that relationships, not only at the professional, but also at the personal level between management and subordinate staff changed significantly during the course, much to the appreciation of the participants at both levels of employment. There are frequent references to this phenomenon in the weekly questionnaires as well as in the end-of-course evaluation.

The data base also contains evidence that, in those cases where people already knew each other before the course started, but had less than positive perceptions of each other, those perceptions underwent dramatic changes during the course.

Finally, not only were there changes in the environment of the course itself, but even in that surrounding the course. In entities where only part of the staff were participating in the workshop, colleagues would closely watch

what the participants of the course were doing, show interest and great curiosity in the motivational messages, asking whether they could have them as well, and on occasion feel encouraged to participate in interactions between the facilitator and his students, when such events took place in the students' work environment. In little more than a month, evidence started to emerge that ESMI had become a living reality not just for the participating students, but also a, probably magic, concept for many people around it, and even far away from it. When the facilitator entered a conference room at the ministry, he could be greeted by the audience present in that room, informing him that no ESMI-people were among them. On occasions that had nothing whatsoever to do with the course, taking place in a town of a million inhabitants, he could be approached by people whom he thought should not even be aware of what he was doing, asking him how ESMI was going.

The research assistants refer to these environmental effects in Conclusions 4, 5, 6, and 8 of their independent research report (Appendix 10). They argue (Data Base Item 5.2.5.002) that these effects should not be seen as isolated from other effects, particularly not from those mentioned in their first three conclusions that the "little notes" are seen as representing the facilitator, that they provide comfort, and that they renew constantly the initial pledges made and stimulate actions and initiatives related to these promises. That is, the environmental effects would not have occurred if the facilitator had not

been accepted by the students as a source of comfort and inspiration, whom they could trust as regards his seriousness to honor his pledges, and with whom they felt they could indeed communicate. They mention in that connection (Data Base Item 5.2.5..002) that many of the course participants "would never forget to mention the importance of the motivational messages" when analyzing their motivational behavior.

What do the participants themselves say about their feelings of incorporation in an environment, and the comfort and support that provided to them?

Quite a few of them refer to these aspects in their written comments about the motivational messages (Data Base Items 2.2.2.025 and 2.2.7.014), as well as in other comments made in response to the end-of-course evaluation questionnaires and the weekly motivational status assessment questionnaires. A selection of these comments follows below.

One student wrote about the "little notes":

They ensured a constant contact between the facilitator and the participant. They provided feedback. They made that the student felt to be a participant, but at a more individual level.

Another student, who does not rate the messages as an essential element in the course, still recognizes that:

They were a stimulus to be constantly aware that we were part of a course.

Other students say things like:

- * *They make you feel that the facilitator is with us.*
- * *They helped to make you know that you weren't alone.*
- * *They allowed me to review some aspects as regards my role in the course.*
- * *They indicated where the facilitator could be found or the group of participants with whom problems of the instruction could be solved.*
- * *They made the participants feel permanently incorporated in the course environment.*
- * *They created a certain link between the participants as well as between the facilitator and the participants.*

Clearly, statements of the above type do perhaps not reveal a direct connection between the messages and particular events that helped structure and restructure the instructional environment. The reason why this is so, can be quite obviously related to the interpretative framework hypothesized earlier, a view for which support can be found not only in the research assistants' independent report, as mentioned before, but also in the following concluding statement found on one of the media assessment questionnaires (Data Base Item 2.2.2.025).

Finally, I should perhaps say that the integrated use of media was found to be extremely efficient and motivating. It was possible to create a kind of interaction between the different media, in such a way that the instruction, which at first had

appeared to be a gigantic challenge, took on a more facilitated outlook and far different from the routine patterns to which we were used.

In conclusion, it is interesting to observe that long after the course is over, the environment created by it continues to exist. Or, in the words of one of the research assistants, in a letter written after the researcher had already left the field:

ESMI is becoming an increasingly more universal concept. It no longer only means a methodology, but also friendship, coziness, an animal with whiskers and a tail....

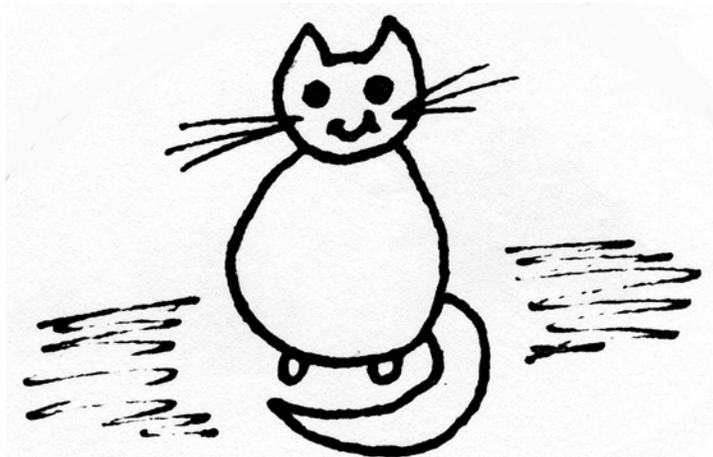


Figure 5. "An animal with whiskers and a tail."

(The research assistant in question, who made the above drawing, had named the kitten, entrusted to her care on the day the workshop started, *ESMI*.)

RESULTS AND DISCUSSION - PART IV:

QUESTION 3: THE OPTIMALITY ISSUE

IS THE STRATEGY ITERATIVELY EFFECTIVE?

Proposition 3.1.1: *The intervention is continually effective over time*

In the previous chapters I have argued that the clinical use of motivational messages is a valid strategy to help adult learners in adverse motivational circumstances cope with their motivational restraints. The argument was built on evidence collected in the framework of the implementation of two workshops, aiming at installing competency in the area of instructional design. An extensive data base was established, the content of which could be analyzed in connection with the validity issue.

Following this effort, the same data base was used to address the question of *how* and *why* the strategy worked, by looking into the interaction between the motivational messages and various components of the instructional environment. Evidence related to this issue points to the existence of a complex set of interactions, which can be both direct and indirect, that this study argues should be considered likely explanations of the way motivational messages work.

Addressing both questions referred to above has led also to establishing an overall interpretative framework in the context of which the multi-faceted data base can be explored and interpreted in a consistent way.

The final question to be addressed in this study is that of optimality, particularly in the sense of iterative effectiveness of the strategy under scrutiny. How well does it work, and can it be made to maintain its effectiveness over time under changing circumstances by adjusting itself to those circumstances? It should be considered in that regard that many instructional interventions last for considerable periods of time. In the case of the two workshops on which this study is based periods of more than three months were involved. Many school based instructional programs are built on the assumption that students and instructor have to live with each other for at least that period of time, and often longer. Can the medium be managed by a single instructor over such periods of time, and is it sufficiently sensitive to react adequately to changes in the environment?

IMPROVEMENT THROUGH APPLICATION

The first part of this question should be answered affirmatively, looking at the two cases analyzed in the context of the present study, in which a single instructor was able to use the strategy effectively during such periods of time. However, the information available in the data base also shows that

he has been able to do a considerably better job the second time than when he first applied the strategy three years earlier. Evaluation results, particularly those presented in Tables 4 and 5, indicate an increased effectiveness of the instructor's handling the medium of the motivational messages in comparing the ESMI-2 case with the ESMI-1 case.

Looking at the messages themselves, the following differences between the ESMI-2 and ESMI-1 workshops can be found.

- A considerably larger number of messages was designed and distributed.
- A larger number of different types of messages was produced. (With the exception of the contract signed at the beginning of each of the workshops, there were no interactive components in the process of motivational communication applied in the ESMI-1 workshop, whereas there was a number of such components in the ESMI-2 case.)
- A greater variety of different motivational concerns was addressed.
- There was a greater variety of graphic and verbal content.
- A considerably larger proportion of the messages was personal or personalized.
- More than on the previous occasion, general messages were written in a personal language. (The suggestion that messages had been directed to individuals, rather than to the group, was so strong that one of the

participants asked during the post-instructional interview [Data Base Item 1.3.1.010] whether all messages had been personal ones.)

The time available to the instructor in conducting the second workshop was certainly not more than when the first ESMI workshop was conducted three years earlier. The number of students was basically double that of the ESMI-1 workshop, and the researcher had additional tasks - his research concerns and consultancy commitments besides his training tasks - that were at least as time consuming as his additional commitments in 1986 (Data Base Item 3.2.4.001).

The complexity of factors adversely affecting the motivation of the learners was greater in the ESMI-2 workshop than in the ESMI-1 workshop, due to the greater variety of students participating in the former event, and the fact that they belonged to different organizational entities.

The combination of all the above circumstances suggests that the strategy was able to undergo progressive improvements basically through the process of applying it. I.e., the strategy itself encompasses action which is continuously adapted and readapted to changes that occur in the motivational environment, and that are sensed through the process of systematically administering the assessment of motivational status questionnaires as well as through direct observation by the facilitator.

ANALYSIS OF EVENTS OVER TIME

Looking at the ESMI-2 workshop over time, it is observed that during its implementation there have been two instances when there was a clear drop in performance. The first of these instances followed the completion of the part of the course that had been dedicated to acquiring the conceptual framework underlying the systematic instructional design process. Three tests had been administered, assessing the students' knowledge in that regard. Due probably to the overemphasis on tests in the Mozambican educational tradition, the students' main interest had gone to their preparation for those tests, and too little to activities that had been planned to develop concurrently in preparation of the students' carrying out their individual design projects. Many students, even, were under the impression that, since there were no more tests, in practical terms the course was over. They were unaware that a more demanding part than what they had already experienced as very demanding, was still to follow. The motivational messages strategy had not reacted appropriately to this developing imbalance (Data Base Items 1.1.2.009 and 5.2.1.141). As soon, however, as it was discovered, it could be corrected (see e.g. MM-32, Data Base Item 2.2.1.040).

Something similar happened more towards the end of the course when punctuality and assiduity suddenly started to deteriorate. A reason why this happened could not be discovered, but it could effectively be cured.

A motivational message, which, according to the students (e.g. post-instructional interviews, Data Base Segment 1.3.1) impacted in that regard, was one specifically prepared to do so (MM-47, Data Base Item 2.2.1.057), having on the outside the words: "Your presence motivates your colleagues". Though this was a general message, directed at the audience as a whole, it was presented in handwritten form, and explained that analysis of responses given to the weekly questionnaires showed that conviviality among the participants was experienced as one of the most motivating factors, and that, on the other hand, the fact that people started to arrive late or did not show up at all, was considered demotivating. It asked people to correct their behavior and to inform the facilitator, directly, or through a colleague, when they could not come. A considerable improvement followed almost immediately, and was sustained until the end of the course. People even started to inform their colleagues when they were unable to attend the open sessions, which they were completely free to attend or not to attend.

In the next chapter, the analysis presented in the present chapter will be integrated among the conclusions drawn in the previous chapters. Together they will form the basis for a set of more general recommendations.

CONCLUSIONS

ATTRIBUTING MEANING

In this final chapter, I shall relate the findings presented and analyzed in the previous four *results and discussion* chapters, to the original intentions of the study, as expressed in the first two chapters. In the first chapter, the research interest can be seen founded in an already existing knowledge base, particularly as regards the area of motivation. In the second chapter, the pursuit of that interest in methodologically defined ways can be seen founded in research traditions and conventions proved effective in dealing with similar efforts to create knowledge about psycho-social phenomena. The basic questions to be addressed here are: Has the study lived up to its expectations? Has valid knowledge been created? Does that knowledge contribute to expanding the existing knowledge base? Can this knowledge be used by others? What are possible limitations? In short: What is, or can be, the meaning of this study for the work of the educational research and instructional development community at large? It is the reader's responsibility to attribute that meaning through useful applications and further research related to the content of the present study. It is the author's

responsibility to provide cues to enhance the likelihood that such follow-up activities will be generated.

INTEGRATION WITH EXISTING KNOWLEDGE

The *clinical use of motivational messages* is a motivational strategy the development of which came about in order to solve a problem. That problem was the following. The researcher was requested to conduct a workshop that would allow a group of learners to acquire instructional design knowledge and skills in circumstances that would constitute a constant attack on their potential to take their learning tasks seriously and bring them to a satisfactory end. While these learning tasks would occupy the students for at least half of their daily time, the instructor would only have direct access to them during two weekly periods, totaling no more than five hours a week. A solution to this problem was found by maintaining contact with the students outside class periods by means of messages. The content of these messages should ensure that learners would be able to cope with their motivational restraints. The result of this work has been reported on earlier (e.g. Visser, 1988a).

Designing messages for the purpose indicated above is an activity which should be driven by a method. In the context of that method, clarity

should be obtained about what, at any particular moment, are the motivational requirements of the learners in question, and what should therefore constitute motivational objectives to be attained, both in an immediate sense and within the framework of the course as a whole. Other questions that should be answered are: How do I know whether these objectives have been attained? What are the possible alternatives to design messages aiming at the attainment of the envisaged objectives? How can I select among these alternatives? How should messages be delivered to the audience? In what ways can I get feedback from the audience that will allow me to adjust the procedure in a continuous fashion to the ever changing situation?

It has been argued earlier in this study that Keller's (e.g. 1987a&b) ARCS model is singularly suited to address the need to deal with questions of the above nature. It does typically not provide a standard answer to these questions, nor is it a model that provides its users with a simple algorithm to find such an answer. Models of the latter nature basically assume 'the right action for the future' to be deterministically related to identifiable and measurable variables of the present. Contrary to that position, the ARCS model assumes its users to take on a continuous problem solving mode, i.e. a way of involvement in motivational intervention which assumes motivation to be a continuous concern, the nature of which cannot be linearly derived

from initial conditions, requiring analysis to be an ongoing process as the basis for addressing motivational problems creatively.

The *clinical use of motivational messages*, being based on the ARCS model, is a pro-active strategy. Because of the importance of the ARCS model as an analysis tool for that strategy to be effective, the previous work was reported on from the perspective of validation of the ARCS model (Visser & Keller, 1989). The current study provides further support to the earlier conclusion that "not only was the [motivational messages] strategy effective, but so was the [ARCS] model" (p. 43). As in the previous study, the motivational messages produced in the context of the ESMI-2 workshop can be coded in accordance with the motivational dimensions and subcategories they address. Rather than providing the reader with a tabularized overview of such an analysis, I have chosen a different way to present the variety of content and intention of the messages produced in this study. Appendix 9 shows a selection of different instances of the motivational communication process.

Regarding the *attention* dimension of the motivation continuum, messages were given variability of presentation and content. They were often received with surprise, and students were reported to be looking forward to the next one. As a medium through which the larger motivational system was managed, they referred to ever changing aspects of the course,

maintaining the students' attention and avoiding routine. Despite the regularity of appearance of the messages, great care was taken to make them address the unexpected, drawing the students' attention to particular aspects of the instruction. They particularly encouraged students to assume an inquiring mind, providing them with questions, on appropriate occasions, rather than with answers.

The *relevance* dimension was attended to by showing the relation between on the one hand the instruction and the learning experience as such, and on the other hand the participants' general and personal goals. Reference was also made to particular roles participants could play in the context of the instruction, as well as by applying the learned skills in future professional contexts, whereas in yet other parts of the motivational communication process the relation between the instruction and the learners' current and past experiences received attention.

Confidence was allowed to be built by drawing the students' attention to attainable success opportunities, by carefully explaining to the students what was expected of them, and what facilities would be available to them, showing that goals would be within their reach. In providing feedback to the students, cues were provided in the messages that would encourage students to look upon their results as an achievement over which they could exercise control.

Satisfaction was often a direct result of receiving a message, particularly when they were, or were perceived as being, personal. The messages showed what students had learned, where possible referring, implicitly or explicitly, to possible applications of newly acquired knowledge and skills. Events were created, and referred to in the messages, that were perceived as constituting positive consequences of the students' continued participation in the course. The confidentiality rigorously maintained in communicating with the students, provided a strong basis for equity.

As shown above, and referred to in the introduction to this study, there is a distinct connection between the *clinical use of motivational messages* and the ARCS model. In looking back at the use of that model in the context of the two workshops incorporated in the embedded multiple-case perspective of this study, attention should be paid to a slightly different way of using the ARCS model in the case of the ESMI-1 workshop, as compared to the experience of the ESMI-2 workshop. This different use is also reflected in the difference in scope of the research interests in the two cases.

During the ESMI-1 workshop, as reported in the earlier study (Visser & Keller, 1989), the instructor and motivational facilitator was conceived more as an outside agent, sending out messages, looking at what occurred as a consequence of these messages, and taking that feedback into account in subsequent messages. In contrast, in the present study, a different

conception, and consequently a different practice, governed the process. The facilitator was looked upon as himself being part of the process. He was not only sender, but also receiver, and conceived as being subject to influences of the motivational communication process. Solving motivational problems could therefore, much more than on the previous occasion, become a joint effort of students and facilitator. The use of the ARCS model in that different perspective of designing and delivering motivational messages was found to be considerably more effective, as can be concluded from the arguments presented earlier in this study. As has already been mentioned, and can be verified by looking at the examples presented in Appendix 9 and by inspection of the data base, the result was something with an interesting degree of reciprocity, students starting to participate themselves actively in the motivational communication process.

Evidence has been presented and analyzed in the previous chapters supporting the propositions that not only did the messages positively influence the students motivational and related learning behavior in a variety of ways, but the process of applying the strategy could also be seen to favorably affect the facilitator by making him more aware of the students' problems. Besides, it resulted in an enhancement of the instructional environment.

It should be emphasized in the above context that the non-linear character of the problem solving process supported by the ARCS model was of particular importance in allowing the facilitator to assume the different, and more effective, role in the motivational communication process developed during the ESMI-2 workshop. That role would have been impossible, had the underlying basis of the clinical use of motivational messages been a different one.

METHODOLOGICAL CONCERNS

In pursuing the research interest underlying the present study, a naturalistic, rather than a rationalistic, mode of inquiry was chosen. Within that mode of inquiry, a case study approach, and within that approach an embedded multiple-case perspective, were chosen as most suited to circumstances and intentions. A rationale for these choices was presented in the *method* chapter of this study. Concerns regarding reliability, validity, and generalizability were discussed in that context. Looking back at the results and their discussion in the preceding four chapters, can a claim that valid, reliable, and generalizable results were obtained be upheld?

One of the possible threats to validity of the study was the concurrent involvement of the same person in the role of researcher and that of instructor and motivational facilitator. The disadvantage of this double play is obvious,

as it could have introduced researcher bias towards certain techniques the instructor might have developed proprietary feelings for. The advantage of it is equally obvious. It gave the researcher the best possible, and most natural, way to act as a participant observer in the teaching-learning process of the course. As explained in the *method* chapter, various measures were taken to eliminate possible bias.

The establishment of a well organized, accessible data base, was an important concern in the above respect. In Part 1 of the *results and discussion* section, extensive attention has been paid to the process of establishing that data base and to describing it in a summary fashion. A more detailed description of this source of documentary evidence, covering two regular bookshelves and approximately 100 hours of audio recording, can be found in Appendix 7. Collecting data from the participating students was done either by applying anonymous procedures, or by using unobtrusive ways of interacting with them to obtain the information.

The work of the two research assistants has been an equally important contribution to eliminating the threat to validity posed by the researcher's concurrent involvement as an instructor. Great care was taken (Data Base Items 5.2.4.001 to 5.2.4.003) to clarify to them that from a research perspective it would be equally important if the study showed that the motivational messages worked or if it proved that they did not work. It was also made

clear that in the latter case it would be a particular interest to find out why they would not work this time. The research assistants themselves confirm in their independent, signed, report (Data Base Item 5.2.5.002) absence of any bias as regards the proposition that the messages would work, admitting that their initial inclination had been to think of the whole idea of using them as something slightly ridiculous. The process of how the work of the research assistants has fed into establishing the data base has been described in detail in both the *method* chapter and Part I of the *results and discussion* section.

The use of multiple sources of evidence, as well as multiple ways of tapping these sources, was intentionally included in the research strategy in order to strengthen the validity of the study. The extent and complexity of the data base (see e.g. Appendix 7) can be seen as a direct measure of the extent to which this concern was taken seriously in implementing the study.

Unobtrusiveness of operation was another important point. While students were made aware of the fact that formative research was a natural interest of any serious instructional developer, including the one they were working with as a facilitator, and that for that reason the opportunity of conducting the workshop was being taken advantage of also from a research point of view, not a single procedure was used that could not be explained by the students as serving the interest of the course itself. As mentioned before, the way the research assistants had been operating, had been so unobtrusive

that the person who should have known what was going on, referred to their research tasks as "the best kept secret of the ESMI workshop", when the truth was finally revealed during the graduation ceremony.

The inclusion of both qualitative and quantitative perspectives in collecting and analyzing data constitutes another enhancement of the quality of the study. Strong evidence could be derived from analysis of the numerical data, that was found to converge with evidence related to the qualitative perspective. For obvious reasons, any attempt to analyze the numerical data, using techniques based on random selection of subjects, would have been counter to the defined method. The techniques, however, that were in fact applied, show numerical differences that are eye-catching and which, in conjunction with the qualitative evidence available, constitute strong arguments in support of the claims made in this study.

Particularly towards the end of the course, various opportunities were taken advantage of to feed back important conclusions that started to surface in the data base to the audience. The end-of-course open-ended evaluative discussion was one these opportunities. On earlier occasions, instructional procedures were used to have students debate their own motivation as regards their participation in the workshop. Those debates show consistency with the way the data base had been developing.

The high degree of rigor applied in documenting the study, as evidenced by content and structure of the data base, is an important asset of the present study as regards reliability and generalizability. It has been stressed earlier that literal replication of the study is not part of the intentions of the mode of research chosen to pursue the interests of this research effort. A naturalistic replication, however, should certainly be possible. The two cases analyzed in the embedded multiple-case perspective which governed part of this study, constituted in fact naturalistically similar instances of the application of the motivational strategy under scrutiny. The fact that these two cases were not only naturalistically similar, but also in some other aspects different from each other, provides a broader basis for naturalistic generalizability than each of the separate cases would have established.

One of the reasons why a case study approach was chosen for this study was its flexibility in allowing to reveal the dynamics of the process under investigation. The way the study developed proved indeed to be in accordance with that expectation. The constant interaction between research team and research setting, and the awareness within the research team to take advantage of opportunities whenever they arose, has proved to be an important advantage of this method. Adjustment of planned research procedures, in order to obtain more valid data, was another important feature of the case study approach. Particularly towards the end of the course, for

instance, when a certain questionnaire fatigue became evident, anonymous collection of data was substituted by instructional procedures that could unobtrusively be used to obtain the same data. Also the approach to substantiating or insubstantiating the research propositions changed during the course of action. Where initially these propositions had been looked upon as possible expressions of rival explanations, it became gradually clear that most of them could be looked upon as providing conversion with a higher level perspective, lifting the messages out of their isolation and placing them in the context of the motivational system as a whole.

GETTING OUT OF THEIR WAY

'It is amazing how much people can learn, as long as you succeed getting out of their way.' In October 1987 I had a telephone conversation with Robert Mager in which I had the pleasure to discuss with him some of the results obtained in applying the motivational messages strategy during the ESMI-1 workshop. It prompted him into making the statement quoted above. How should these words be interpreted in the context of the experience described in the present study?

Like learning, motivation is very much an autonomous act, something that is done by the interested person him- or herself. An outside agent can intervene in that process only in as far as the other person is willing to let that

happen. For a motivational intervention to be effective, the following two basic conditions must therefore be fulfilled:

- 1) The motivational facilitator must acquire and keep having the trust of the motivational subject, so that the latter will allow the former to become and remain motivationally active.
- 2) The subsequent motivational interaction must be of a nature that allows the motivational subject to perceive that s/he remains in full control of her/his situation.

Besides these two conditions, the objective environment must be such that there is something in relation to which the motivational subject can get motivated and which is accepted by the motivational facilitator as worth his or her intervention.

It should be stressed that the conditions outlined above are *necessary* ones. They should, however, not be looked upon as *sufficient*. They do particularly not mean that the learner should be left alone. The intervention described in this study was not one structured such that the facilitator would step out of the process and leave the learner alone. Quite to the contrary, he would constantly be present, as the participating subjects frequently noted in their responses to questionnaire prompts, but his was a very special presence. He would make his presence known to the learners, without making it a dominant phenomenon in the learners' life. After having communicated his

presence, making clear to the students how it could be taken advantage of in the particular circumstances, he would step aside, leaving it to the learner to decide if and how, s/he would attribute meaning to that message.

This particular way of communicating one's presence has an especially strong meaning within the local culture, as one of the research assistants (see Data Base Item 5.2.4.006) explained during a research debriefing. "A word is something to believe in" in the African tradition. Its repeated utterance can provide comfort. He compares it with what a mother might do when sending her child to a neighbor, while she would stay behind, painting the situation in the following words.

As it is already dark, the child is afraid. There is a dilemma. The child knows it has to go, because it has been told to do so. It can't refuse the order. On the other hand, it is afraid. To solve the problem, the mother says: 'Don't worry. Go! I'll keep calling you'. And she calls out the name of the child all the way long: 'Go, Florinda, go!' She provides comfort to the child by means of words.

The interpretation converges with the way some of the students refer to the messages in listing what positively motivated them: "The words of the teacher".

In the context of the conditions specified earlier as necessary for the motivational intervention to be effective, the separate conclusions drawn in the previous chapters can be interpreted as follows. In the case of most

subjects of the present study, the facilitator has succeeded to acquire and maintain the necessary confidence for his intervention to become effective. The end-of-course evaluation results give a clear indication in this respect. Table 4 shows that in the case of the ESMI-2 workshop, the facilitator was rated highest in terms of his motivational importance for the students, whereas in terms of instructional importance he was rated only second after the main instructional text used during the course. By comparison, in the case of the ESMI-1 workshop, two other media were rated as being of slightly greater importance than the facilitator. However, his absolute rating was essentially the same as in the ESMI-2 case: midway between being considered as having had a dramatic influence and having had an influence without which the main goals would not have been reached. Or, in the words of some of the students (Data Base Item 2.2.2.025):

- * *The facilitator was important in order to complete in a systematic way the information received through other media. He unleashed in the students attitudes favorable towards the instruction, imparting confidence in them.*
- * *The facilitator was of the highest importance, both to achieve the goals of the course and for the motivation of the participants, on the one hand because of his skill in approaching the subject matter, and, on the other hand, because of his experience in transmitting his convictions to the participants.*

- * *Fundamental ..., as constantly present support, to understand the instructional materials, explaining them, answering questions, guiding group work. On the other hand, he was of motivational importance because of the encouragement he provided to the less apt participants, because of his disciplined and discipline instilling behavior, and because of his readiness.*
- * *I attribute equal weight [to instructional and motivational importance of the facilitator]. He transforms the words and phrases into action, in a nonauthoritarian way, allowing the students to develop receptiveness.*

The second condition, that there was something the two participating parties in the process of motivational interaction could become inspired with and motivated about, was also fulfilled. Initially, students of the ESMI-2 workshop had little detailed and concrete awareness of what the course would be about, considering their lack of experience in the field of systematic instructional design. Many of them communicated in the pre-instructional interview that they had not quite understood some of the terminology used in the brochure describing the course (MM-1, Data Base Item 2.2.1.001). However, as soon as they started to understand, beginning with their participation in the inaugural session, the interest of what they were in the process of learning, relevance, both immediate and remote, of the result of their training, started to appear among the motivational factors listed on the weekly questionnaires (Data Base Segment 2.2.7). Their appreciation for the

content of the course is also clear from the end-of-course evaluation of particularly those media and instructional strategy components that were most directly related with the course content. Participants were generally impressed with the applicability of their newly learned skills and knowledge, which they felt were not only relevant in the context of design of instructional materials, but also with regard to other aspects of their professional, and indeed common, daily life.

As one student said (Data Base Item 2.2.7.014):

This course is of extreme importance for instructional designers. Even for teachers who are involved in face-to-face instruction, it is a course which can be of considerable help to the instructor, who will better know his/her students, their needs, what would be the best work environment, etc.

I, as a teacher, have really learned a lot which I did not know, and I think that if I had had that knowledge before, I would have taught better classes.

The student then proposes that the content of the course be incorporated in the curricula for teacher training at the major institutions, continuing by saying:

ESMI could also be taught for other sectors, because, when I analyze it, this methodology can be applied in any branch.

Another student, in evaluating the instructional strategy of the course (Data Base Item 2.2.7.014), puts it this way:

Just as the ESMI methodology, the instructional strategy [of the workshop] represents for me a 'revolution' in carrying out and participating in a given learning process.

Its merit must have resided in having "driven" the participant to limits of individual realization previously unknown by the person in question.

Finally, one of the conclusions is that it is possible with adequate programming and methods (besides great will) for us to produce something of value. In that respect, the strategy of the course was a school: The combination of group work, individual work, and the stimulating action of the facilitator, showed to result in considerable returns.

GETTING INVOLVED WITHOUT GETTING IN THE WAY

The above statement, besides indicating the degree of relevance the course content succeeded to acquire in the eyes of the students, also alludes to the process by which that content has become a reality for those who participated in the ESMI workshops. The work was basically done by the students themselves, the facilitator being involved in the first place by stimulating the students' activities. In both workshops, from among 15 or 16 components that constituted the instructional strategy, the two that received the highest marks from the students for their importance were Component 06, *carrying out of an individual design project*, and Component 09, *writing a*

report about the individual design project, i.e. exactly those two aspects in which the students had been most particularly autonomous in carrying out their tasks (see Table 3).

In order for the facilitator to get involved, as he was apparently perceived by his students to have been, taking into consideration their observations in that regard, he had to operate through a diversity of media, including himself, in an integrated and coordinated way. This role of the teacher follows Heinich's (1970) "new paradigm" (p. 146), which attributes distinct roles to classroom teachers (with or without media) who interact directly with the students, and teachers who do so in a mediated way, in the case of the ESMI workshops e.g. through the main instructional textbook used in the course, both subordinated to a common planning concept that regulates the role of each as well as the way they interact.

The motivational messages constituted the most prominent means to help students decide about the ways they could best interact with the various media available. Due not only to the variability in personal characteristics, but particularly also because of the variance in previous exposure to media and ways to access media, patterns of interaction between students and media could vary strongly and were allowed to do so. Students referred positively in that respect to the facilitator's "flexibility" (see e.g. the responses to the various motivational status questionnaires, Data Base Segment 2.2.7).

Because of their important role in the above context, the "little notes" acquired a wide variety of meanings for the student community in question. Those various meanings have been analyzed in the previous chapters in the light of the propositions formulated in connection with the three main research questions that guided the present study.

In the framework of the embedded multiple-case perspective adopted for this study, evidence could be brought to bear upon the contention that the clinical use of motivational messages is a valid strategy to help adult learners in adverse motivational circumstances overcome their motivational restraints. The fact that the two cases on which the argumentation was built show both similarity and differences, on the one hand strengthens the argument that the strategy has replicable effects, and, on the other hand, enhances the naturalistic generalizability of the results obtained.

In trying to explain *how* and *why* the strategy under scrutiny worked, a complex set of propositions could be substantiated by evidence collected during the implementation of the ESMI-2 workshop, while one proposition could be insubstantiated. The different meanings attributed to the "little notes", following these propositions, do not exclude each other. Quite to the contrary, they often overlap and reinforce each other. The various connotations of the messages may get different emphasis from different people and for the same person at different moments. Just like it is important

to include a variety of media in one media-mix, so as to attend to the different and varying needs of the audience, it is also important that within the medium there is sufficient variety so that it will adequately interface with changes among the target group. This is particularly important for a medium like the motivational messages, if it is indeed to provide guidance as regards the use of all other media.

The semiotic complexity referred to above converges on the same set of meanings that can be derived from the nine conclusions drawn by the research assistants in their independent report (Appendix 10), of which the research assistants do likewise conclude that "among the majority of them exists an interrelation and interdependence". They add to this conclusion that "the most important aspect resides in the clear vision and wisdom the person should have who wants to dress the messages such that their role is a motivating one and shape them such that they function in accordance with that role".

This conclusion is in accordance with the evidence collected, which does indeed show a perception on the part of the students of the presence in the workshop of instructor capabilities reflected in the research assistants' conclusion quoted above. What does that mean?

It probably means that any ordinary, well intended teaching professional, who is willing to be sensitive to her or his students' needs, who

is prepared to put an effort into sensing those needs on a continuous basis for the full duration of the instructional process, and who sees her or his role not in the first place as that of one who transmits information, but one who helps others to create information in interaction with the facilitator, is able to apply the strategy adequately.

It also probably means that anyone active in training and instruction can start experimenting with the medium. The results of this study show that the strategy is iteratively effective, i.e. it adjusts itself while it is being practiced by the type of person described above, as strong feedback signals guide the motivational designer in adapting the strategy to changing circumstances, and in individualizing it in accordance with variance in personality characteristics among the audience.

Implementing the motivational intervention under consideration requires availability of time on the part of the facilitator. This constitutes a trade-off as regards time available for strictly instructional purposes. This being so, the best results may be expected in instructional contexts where large proportions of delivery and first order processing of information are taken care of by pre-programmed media, such as self-instructional texts.

Computerized storage and facilities for electronic reprocessing of the messages is an important asset. Part of the messages used in the ESMI-2 workshop reported on in the present study could be based on messages that

had been used earlier in the ESMI-1 workshop. Time can be saved that way, and a more effective use can be made of experience of application of a particular message on past occasions, which enhances the iterative effectiveness of the medium.

It has already been suggested in the previous study (Visser & Keller, 1989) that the clinical use of motivational messages be experimented with in distance education environments. One of the researchers' students in the ESMI-2 workshop, with experience of that mode of instruction, independently entered the same suggestion on the end-of-course evaluation questionnaires. Particularly serious motivational restraints usually interfere with the distance learner's willingness to carry out learning tasks. In those systems where field tutors maintain a relatively close contact with the audience, the strategy could probably be managed at a decentralized level and quickly respond to the students' motivational requirements.

Needless to mention that there is an important role for teacher training as regards the clinical use of motivational messages. Designing motivational messages is something greatly entertaining and rewarding, that highly contributes to shaping the prospective teacher's sensibility. Incorporating the activity among the various components of the teacher training curriculum will contribute to another type of teacher emerging from the training

program, while at the same time ensuring that adequate skills have been developed for that person to be able to operate as a motivational facilitator.

It should be kept in mind in that connection that the clinical use of motivational messages is not a strategy which can be looked upon in isolation. In the framework of the workshops in which its functionality was analyzed in this study, the motivational messages constituted the single most interactive medium among the various media included in managing the motivational system. Considering the evidence available about how and why the messages work, it should be considered unlikely that the messages would have any considerable effect if they were not properly embedded within the totality of the motivational system, i.e. if they were not incorporated among a set of media selected not only on the basis of their adequacy for instructional purposes, but likewise taking into account the motivational needs of the audience. For the same reason it is equally likely that other media would be less effective if the motivational messages were not included in the system.

The above contentions, suggested by the evidence collected in the context of the present research, require further investigation. If confirmed by other studies, they will enhance the applicability of the overall interpretative framework hypothesized in this study to accommodate all the available evidence within one single perspective.

"It would have been nice if some budget would have been available in the framework of the course for a snack during the intermission", commented one student in response to the last question of the post-instructional interview (Appendix 6). "Many people came to class without having eaten", she explained.

Yet they came.

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APPENDIX 1

Example of open-ended questionnaire used to assess students' motivational status:

- 1) original in Portuguese
- 2) translation in English.

While the questions on this questionnaire remain the same, the introductory text changes with the occasion on which it is presented to the students. Students typically respond to this questionnaire on a weekly basis. Responses are analyzed and results fed into the design of the motivational messages.

Original (in Portuguese) of student motivational status questionnaire:

ESMI.10.G

CURSO/OFICINA
EM
ELABORACAO SISTEMICA DE MATERIAL INSTRUCIONAL

I N Q U E R I T O

Estamos ja numa fase bastante avancada do nosso curso/oficina ESMI. Com certeza, continuam a haver factores que fazem com que se sinta desmotivado quanto a perspectiva de ainda ter que continuar. Por outro lado, julgo que existam tambem factores que fazem com que se sinta motivado para continuar o esforco que esta a dar.

A aplicacao deste inquerito, que ja conhece, em diferentes momentos ao longo do curso pretende recolher dados sobre a questao se aquilo que lhe motivou (ou desmotivou) antes continua a ser o mesmo, ou se se mudaram esses aspectos. E de notar que tanto factores internos como factores externos ao curso/oficina podem influenciar o seu comportamento como estudante.

Mais uma vez agradeço a sua colaboracao no fornecimento dos dados requeridos. Os mesmos serviraõ para adaptar continuamente os procedimentos do curso/oficina ESMI as necessidades dos seus participantes, bem como para melhorar o curso no futuro.

DATA: ____ / ____ / ____

No decorrer do curso/oficina ESMI durante a ultima semana, quais foram os tres aspectos (em ordem de importancia) que mais lhe desmotivaram no respeitante a realizacao das actividades ESMI previstas?

- 1) _____
- 2) _____
- 3) _____

E quais os tres aspectos que mais lhe motivaram?

- 1) _____
- 2) _____
- 3) _____

O que merece neste momento maior atencao para melhorar a qualidade do Curso/Oficina ESMI?

Translation of student motivational status questionnaire:

ESMI.10.G

**COURSE/WORKSHOP
IN
SYSTEMATIC DESIGN OF INSTRUCTIONAL MATERIALS**

QUESTIONNAIRE

We have already reached a rather advanced stage in our **ESMI** course/workshop. Certainly, there will still be factors that cause you to feel demotivated as to the prospect of still having to continue. On the other hand, I think there will also be factors that cause you to feel motivated to continue the effort you are providing.

Applying this questionnaire, which you already know, at different moments during the course, is intended to collect data about whether the things that motivated (or demotivated) you before are still the same, or whether these aspects have changed. You should consider that both internal factors and factors that are external to the course/workshop may influence your behavior as a student.

I should once more like to thank you for your collaboration in providing the requested data. They serve to continually adapt the procedures of the **ESMI** course/workshop to the needs of its participants, as well as to improve the course in the future.

DATE: ____ / ____ / ____

What were (in order of importance) the three aspects that, during the past week of the **ESMI** course/workshop, demotivated you most as regards your carrying out the planned **ESMI** activities?

- 1) _____

- 2) _____

- 3) _____

And what were the aspects that most motivated you?

- 1) _____

- 2) _____

- 3) _____

What deserves most at this moment attention in order to improve the quality of the **ESMI** course/workshop?

APPENDIX 2

Overview of participation in the ESMI-2 workshop.

A total of 34 candidates listed pertained to 6 different organizational entities (P, Q, R, S, T, and U). 32 of the listed candidates effectively got to participate, having been admitted with different kinds of status:

***regular students** (22) were those for whom no particular limitations seemed to exist at the time of their admission as to their possibilities to complete the course,*

***special students** (7, including the 2 research assistants) were those for whom it was expected that their regular work conditions would not allow them to fulfill all course requirements,*

***invitees** (2 individuals who had participated in the previous ESMI workshop, three years earlier) were allowed to participate in course activities of their choosing without obligation to fulfill any particular requirement,*

***observer** status was attributed to 1 individual who, at an already advanced stage of the workshop, requested to be allowed to attend the course activities.*

OVERVIEW OF PARTICIPATION IN THE ESMI-2 WORKSHOP

ENTITY	STUDENT	STATUS
P	01	regular
	02	regular
	03	regular
	04	regular
	05	regular
	06	regular
	07	regular
	08	regular
	09	regular
	10	<i>special</i>
	11	<i>invitee</i>
Q	12	<i>special</i>
	13	<i>special - research assistant</i>
R	14	regular
	15	regular
	16	regular
	17	regular
	18	regular
	19	<i>special - research assistant</i>
	20	<i>special</i>
	21	<i>special</i>
	22	<i>observer (later turned special)</i>
S	23	regular
	24	regular
	25	regular
	26	regular
	27	<i>special</i>
	28	<i>invitee</i>
T	29	regular
	30	regular
	31	regular
	32	regular
U	33	<i>candidate, did not participate</i>
	34	<i>candidate, did not participate</i>

APPENDIX 3

Evaluation instrument to determine the perceived importance of each of 16 instructional strategy components used in the ESMI-2 course/workshop:

- 1) original in Portuguese
- 2) translation in English.

This questionnaire was distributed to the students one week before the last class session. Within a couple of days it was completed by them and returned to the researcher in blank identical envelopes that had been distributed with the questionnaire. During their training in the ESMI course, students had been made familiar with critical approaches to looking at strategic aspects of delivering instruction.

Original in Portuguese of instructional strategy components evaluation questionnaire:
(page 1 of 6 pages)



CURSO/OFICINA
EM
ELABORACAO SISTEMICA DE MATERIAL INSTRUCIONAL

AVALIACAO FORMATIVA DA ESTRATEGIA INSTRUCIONAL DO CURSO/OFICINA

Caro participante,

Participou durante quase 3 meses no curso/oficina ESMI. Durante esse periodo dedicou um grande esforco a elaboracao de um modulo auto-instrutivo. Nesse contexto teve a oportunidade de descobrir a grande importancia da avaliacao formativa da instrucao desenvolvida.

Eu participei na sua experiencia de aprendizagem, nao so como facilitador, mas tambem como desenhador do curso. Agora e a minha vez de estabelecer a validade daquilo que fiz em planificar e implementar os conteudos e procedimentos do curso.

Nesse sentido gostaria que dedicasse agora algum tempo e muita seriedade ao preenchimento do inquerito que se segue.

A estrategia instrucional do curso/oficina ESMI tem incluido as seguintes 16 componentes diferentes:

1. estudo do livro de Dick e Carey
2. estudo dos materiais instrucionais complementares
3. apresentacao em aula das diferentes teorias e metodologias
4. discussao das materias estudadas
5. realizacao de exercicios
6. realizacao do seu projecto individual de ESMI
7. consultas com o facilitador
8. apresentacao pelos participantes das suas experiencias no ambito dos seus projectos de ESMI
9. elaboracao do relatorio sobre o projecto de ESMI
10. as tres provas sobre o livro
11. fornecimento pelo facilitador de feedback sobre os resultados atingidos
12. acompanhamento pelo facilitador dos participantes
13. comunicacao sistematica entre facilitador e participantes atraves dos "bilhetinhos"
14. dinamizacao pelo facilitador da interacao entre os participantes
15. colaboracao pelos participantes na avaliacao formativa do curso/oficina
16. visita a Editora Escolar.

Nas listas a seguir apresentadas vai novamente encontrar essas 16 actividades da estrategia instrucional do curso/oficina ESMI, mas aparecem la numa ordem aleatoria. Para cada componente tem uma escala de 5 pontos para classificar a sua importancia. Nessa escala assinale com um circulo o valor que atribui a cada uma das actividades mencionadas, como expressao da importancia que o componente teve para o alcance da meta do curso/oficina. Utilize a seguinte chave (repetida em cada pagina) de interpretacao dos valores de classificacao.

- 1: significa que a actividade em questao (quase) nao teve qualquer importancia, e que provavelmente poderia ter sido dispensada;
- 2: significa que a actividade em questao contribuiu ligeiramente para o alcance da meta, e que a nao inclusao da mesma teria influenciado o resultado do curso/oficina, mas nao de forma dramatica;
- 3: significa que a actividade em questao se considera ter sido importante, prevendo-se que a nao inclusao da mesma teria levado a um resultado nitidamente inferior;
- 4: significa que a actividade em questao se considera ter sido de grande importancia, e que a nao inclusao da mesma teria influenciado o resultado do curso/oficina de uma forma dramatica;
- 5: significa que a actividade em questao se considera ter sido de suma importancia para o alcance da meta, prevendo-se que a sua nao inclusao teria impossibilitado o alcance dos objectivos fundamentais do curso/oficina.

Na coluna das observacoes, justifique as classificacoes atribuidas, referindo-se nomeadamente a utilidade que a actividade em questao teve para a sua propria aprendizagem.

Se achar oportuno comunicar ainda outras observacoes relativas a estrategia instrucional, escreva-as na ultima folha (de observacoes relativas a estrategia instrucional do curso/oficina ESMI).

Para guardar o anonimato, devolva o inquerito preenchido, fechando-o no envelope fornecido. Para se poderem processar os dados ainda antes da nossa ultima sessao, o inquerito preenchido sera recolhido amanha.

Obrigado pela sua colaboracao,

Original in Portuguese of instructional strategy components evaluation questionnaire:
(page 2 of 6 pages)

- 1 = (quase) nao tem qualquer importancia; provavelmente poderia ser dispensada
 2 = contribui ligeiramente para o alcance da meta; nao inclusao teria tido influencia, mas nao de forma dramatica
 3 = importante; nao inclusao teria levado a resultado nitidamente inferior
 4 = de grande importancia; nao inclusao teria influenciado resultado de forma dramatica
 5 = de suma importancia; nao inclusao teria impossibilitado alcance dos objectivos fundamentais

ACTIVIDADE	CLASSIFICACAO	OBSERVACOES
14) dinamizacao pelo facilitador da interacciao entre os participantes do curso/oficina	1 2 3 4 5	
15) colaboracao pelos participantes em actividades de avaliacao formativa do proprio curso/oficina BSMI com vista a sua adequacao as necessidades imediatas dos participantes, bem como a melhoria constante e progressiva do curso/oficina	1 2 3 4 5	
4) discussao em grupo e/ou em plenario, orientada pelo facilitador, da materia estudada pelos participantes	1 2 3 4 5	
8) apresentacao por alguns dos participantes das suas experiencias relacionadas com a execucao dos seus Projectos de BSMI	1 2 3 4 5	

Original in Portuguese of instructional strategy components evaluation questionnaire:
(page 3 of 6 pages)

- 1 = (quase) nao tem qualquer importancia; provavelmente poderia ser dispensada
 2 = contribui ligeiramente para o alcance da meta; nao inclusao teria tido influencia, mas nao de forma dramatica
 3 = importante; nao inclusao teria levado a resultado nitidamente inferior
 4 = de grande importancia; nao inclusao teria influenciado resultado de forma dramatica
 5 = de suma importancia; nao inclusao teria impossibilitado alcance dos objectivos fundamentais

ACTIVIDADE	CLASSIFICACAO	OBSERVACOES
11) fornecimento pelo facilitador de feedback respeitante aos resultados atingidos pelos participantes ao longo da realizacao do curso/oficina	1 2 3 4 5	
12) apresentacao pelo facilitador, de forma resumida, das teorias e metodologias pertinentes	1 2 3 4 5	
13) comunicacao sistematica entre o facilitador e os participantes atraves de "bilhetinhos" (tambem chamados "cartoes" ou "correio")	1 2 3 4 5	
12) realizacao pelo facilitador de accoes de acompanhamento grupais e individuais dos participantes ao longo do curso/oficina	1 2 3 4 5	

Original in Portuguese of instructional strategy components evaluation questionnaire:
(page 4 of 6 pages)

- 1 = (quase) não tem qualquer importância; provavelmente poderia ser dispensada
 2 = contribui ligeiramente para o alcance da meta; não inclusão teria tido influência, mas não de forma dramática
 3 = importante; não inclusão teria levado a resultado nitidamente inferior
 4 = de grande importância; não inclusão teria influenciado resultado de forma dramática
 5 = de suma importância; não inclusão teria impossibilitado alcance dos objectivos fundamentais

ACTIVIDADE	CLASSIFICAÇÃO	OBSERVAÇÕES
6) execução pelos participantes, com acompanhamento pelo facilitador, de um projecto individual de elaboração sistemática de material instrucional (Projecto ESMI)	1 2 3 4 5	
5) realização individual e/ou em grupo de exercícios relacionados com a matéria estudada e/ou em preparação de aspectos específicos da execução do Projecto ESMI	1 2 3 4 5	
7) consultas individuais ou em grupo com o facilitador relativamente a aspectos da matéria estudada e/ou relacionadas com a execução do Projecto ESMI	1 2 3 4 5	
9) elaboração pelos participantes de um relatório sobre as actividades desenvolvidas no âmbito da execução do seu Projecto ESMI	1 2 3 4 5	

Original in Portuguese of instructional strategy components evaluation questionnaire:
(page 5 of 6 pages)

- 1 = (quase) nao tem qualquer importancia; provavelmente poderia ser dispensada
 2 = contribui ligeiramente para o alcance da meta; nao inclusao teria tido influencia, mas nao de forma dramatica
 3 = importante; nao inclusao teria levado a resultado nitidamente inferior
 4 = de grande importancia; nao inclusao teria influenciado resultado de forma dramatica
 5 = de suma importancia; nao inclusao teria impossibilitado alcance dos objectivos fundamentais

ACTIVIDADE	CLASSIFICACAO	OBSERVAÇÕES
16) visita a Editora Escolar do INDE, realizada pelos participantes como forma de poder confrontar a teoria com a realidade pratica	1 2 3 4 5	
1) estudo autonomo e/ou em grupo pelos participantes de um texto auto-instrutivo (o livro de Dick e Carey)	1 2 3 4 5	
2) estudo individual e/ou em grupo de apontamentos complementares, elaborados e distribuidos pelo facilitador	1 2 3 4 5	
10) realizacao pelos participantes de tres provas, baseadas em criterios, visando a avaliacao do seu dominio cognitivo da materia estudada	1 2 3 4 5	

Translation of instructional strategy components evaluation questionnaire:
(introduction)

**COURSE/WORKSHOP
IN
SYSTEMATIC DESIGN OF INSTRUCTIONAL MATERIALS
FORMATIVE EVALUATION OF THE INSTRUCTIONAL STRATEGY
OF THE COURSE/WORKSHOP**

Dear participant,

For almost 3 months you have been part of the **ESMI** course/workshop. During that period you dedicated a great effort to developing a self-instructional module. In that context you have had the opportunity to discover the great importance of formative evaluation of the developed instruction.

I participated in your learning experience, not only as a facilitator, but also as designer of the course. Now it is my turn to establish the validity of what I have done in planning and implementing the content and procedures of the course.

For that reason I should like you to dedicate some of your time now, and much seriousness, to completing the following questionnaire.

The instructional strategy of the **ESMI** course/workshop included the following 16 different components:

1. study of the Dick and Carey book
2. study of the additional instructional materials
3. class presentation of the various theories and methodologies
4. discussion of the materials that had been studied
5. carrying out exercises
6. carrying out of your individual **ESMI** project
7. consulting with the facilitator
8. presentation by participants of their experiences in the framework of their **ESMI** projects
9. report writing about the **ESMI** project
10. the three tests about the book
11. provision of feedback by the facilitator about the results obtained
12. guidance by the facilitator of the participants
13. systematic communication between facilitator and participants by means of the "little notes"
14. stimulation by the facilitator of interaction between the participants
15. collaboration by the participants in the formative evaluation of the course/workshop
16. visit to the Schoolbook Publishing House.

In the lists that follow you will find those same 16 instructional strategy activities of the **ESMI** course/workshop, but there they will appear in random order. For each component you will have a 5-point scale to classify its importance. On that scale indicate with a circle the value you attribute to each of the referred activities, as an expression of the importance the component had in achieving the goal of the course/workshop. Use the following key (repeated on each page) to interpret the classification values.

- 1: means that the activity in question was of (almost) no importance, and that it could probably have been done away with;
- 2: means that the activity in question contributed moderately to achieving the goal, and that not including it would have influenced the result of the course/workshop, but not dramatically;
- 3: means that the activity in question is considered as having been important, and that not including it would have given rise to a clearly inferior result;
- 4: means that the activity in question is considered as having been of great importance, and that not including it would have affected the result of the course/workshop dramatically;
- 5: means that the activity in question is considered as having been of extreme importance in order to achieve the goal, while it is foreseen that not including it would have made it impossible to reach the main objectives of the course/workshop.

Justify the classifications given in the space provided for observations, making specific reference to the usefulness the activity in question has had for your own learning.

If you feel you should communicate yet other observations about the instructional strategy, you should write these on the last sheet (observations related to the instructional strategy of the **ESMI** course/workshop).

In order to maintain anonymity, return the completed questionnaire in the closed envelope provided. In order that the data may still be processed before the last session, the questionnaire will be collected tomorrow.

Thank you for your cooperation,

Translation of instructional strategy components evaluation questionnaire:

(text of questionnaire)

Each of the first four pages of the questionnaire repeats the classification key given in the introduction:

- 1 = has (almost) no importance whatsoever; could probably be done away with
- 2 = contributes moderately to achieving the goal; not including it would have been of influence, but not dramatically
- 3 = important; not including it would have given rise to clearly inferior result
- 4 = of great importance; not including it would have affected the result in a dramatic way
- 5 = of extreme importance; not including it would have made it impossible to reach the main objectives

The headings of the three columns read:

ACTIVITY CLASSIFICATION OBSERVATIONS

The translation of the various activities is as follows (presented here in the same random order as in the questionnaire):

- 14) stimulation by the facilitator of the interaction between the participants of the course/workshop
- 15) collaboration by the participants in formative evaluation activities of the **ESMI** course/workshop itself, with a view to adjust it to the immediate needs of the participants, as well as to improve it continually and progressively
- 4) group and/or plenary discussion, directed by the facilitator, of content matter studied by the participants
- 8) presentation by some of the participants of their experiences related to their carrying out their **ESMI** projects
- 11) provision of feedback by the facilitator about the results obtained by the participants during the course/workshop
- 3) presentation by the facilitator, in a summary way, of the theories and methodologies involved
- 13) systematic communication between the facilitator and the participants by means of "little notes" (also called "cards" or "mail")
- 12) actions taken by the facilitator to provide group and individual guidance to the participant during the course/workshop
- 6) carrying out by the participants, assisted by the facilitator, of an individual project in systematic design of instructional material (**ESMI** Project)
- 5) carrying out of exercises, individually or as a group, related to content matter studied and/or in preparation of specific aspects of implementing the **ESMI** Project
- 7) individual or group-wise consulting with the facilitator regarding aspects of the content matter studied and/or related to the implementation of the **ESMI** Project
- 9) writing by the participants of a report about the activities developed in the framework of carrying out their **ESMI** Project
- 16) visit by the participants to the Schoolbook Publishing House at INDE as a way of being able to confront theory with the reality of practice
- 1) autonomous and/or group study by the participants of a self-instructional text (the Dick and Carey book)
- 2) individual and/or group study of additional materials, prepared and handed out by the facilitator
- 10) performance by the participants of three criterion-referenced tests, aiming at evaluating their mastery at the cognitive level of content matter studied.

The text on the last page of the questionnaire reads:

OBSERVATIONS related to the instructional strategy of the **ESMI** course/workshop.

APPENDIX 4

Worksheet used to evaluate the instructional and motivational effectiveness of nine different media used in the ESMI-2 workshop:

- 1) original in Portuguese
- 2) translation in English.

Filling out this worksheet was presented to the students as an application exercise, performed in class, related to relevant content matter studied in the framework of the workshop. A related homework assignment had prepared them for the opportunity. While for the students this served as an opportunity to practice their skills, the same exercise served the research purpose of unobtrusively applying one of the three end-of-course questionnaires.

Original in Portuguese of instructional and motivational media effectiveness worksheet:
(page 1 of 5 pages)

ESMI

CURSO/OFICINA
EM
ELABORACAO SISTEMICA DE MATERIAL INSTRUCCIONAL

EXERCICIO DE APLICACAO NA AREA DO DESENVOLVIMENTO DE UMA ESTRATEGIA INSTRUCCIONAL:
A QUESTAO DOS MEIOS SELECIONADOS

NOME: _____

Um aspecto importante do desenvolvimento de uma estrategia instrucional e a seleccao de meios. Nesse ambito colocam-se questoes fundamentais tais como se, por exemplo, a comunicacao com o publico alvo deve ser realizado atraves de materiais escritos, radio, TV, filme, cartazes, folhetos, ou pessoas (professores, tutores, agentes de educacao comunitaria, etc). Como pode ver, no ambito dessa problematica pessoas sao consideradas meios. Elas podem ainda apoiar-se no desempenho das suas funcoes comunicativas por outros meios, tais como o quadro ou o retroprojector.

A inclusao de pessoas (professores) num sistema instrucional nao deve ser uma escolha automatica. Nem se deve pensar que a escolha de um meio como TV ou filme, que inclui componentes sonores e visuais, e sempre melhor que um meio como a radio, que nao inclui a componente visual. A interacao entre os meios e o publico e algo bastante complexo. Muitos aspectos diferentes devem ser tomados em conta na seleccao dos meios. Esses dizem respeito as caracteristicas dos proprios meios, bem como as caracteristicas da populacao alvo, da instrucao, e das circunstancias em que se realiza a instrucao.

Como exercicio, e ao mesmo tempo para fins de avaliacao do nosso curso, vamos a seguir analisar o papel dos meios utilizados no curso/oficina ESMI. Atraves daquilo que aprendemos ja sabemos distinguir entre o que pertence ao ambito da instrucao propriamente dito, e o que pertence ao ambito da motivacao. E a combinacao dos dois aspectos que devemos tomar em conta. Instrucao a um publico que nao esteja motivado para aprender vai falhar. Por outro lado, um publico motivado fica mal servido com materiais cujo valor instrucional e minimo.

No curso/oficina ESMI foram utilizados os seguintes meios:

1. Documentacao distribuida antes do inicio do curso
2. O cronograma das actividades do curso/oficina
3. O compromisso assinado entre o participante e o facilitador
4. O livro de Dick e Carey
5. Os materiais instrucionais complementares (apontamentos, fichas de trabalho, etc.)
6. Os "bilhetinhos" distribuidos ao longo do curso/oficina
7. O facilitador (apoiado por quadro e retroprojector)
8. O Manual de Actividades
9. Os seus colegas, com que teve a oportunidade de interagir durante o curso.

Desses meios, qual tem sido a importancia do seu papel na instrucao e na motivacao? Assinale na ficha a seguir essa importancia separadamente para os dois fins numa escala de 1 a 5 com a seguinte interpretacao:

- 1: (quase) nao teve qualquer importancia; provavelmente poderia ter sido dispensado
- 2: contribuiu ligeiramente para o alcance da meta; nao inclusao teria influenciado, mas nao de forma dramatica
- 3: importante; nao inclusao teria levado a efeitos nitidamente inferiores
- 4: de grande importancia; nao inclusao teria influenciado os resultados instrucionais/motivacionais de forma dramatica;
- 5: de suma importancia; nao inclusao teria impossibilitado o alcance de objectivos fundamentais da instrucao/motivacao.

Justifique ainda em poucas palavras a sua resposta no espaco de observacoes dado.

Se tiver ainda outras observacoes acerca dos meios utilizados no curso/oficina ESMI, ou sobre o conjunto integrado desses meios, escreva-as na ultima folha.

Original in Portuguese of instructional and motivational media effectiveness worksheet:
(page 2 of 5 pages)

Na realizacao do curso/oficina BSMI foram utilizados diferentes meios. De cada um dos meios a seguir enumerados, classifique a sua importancia para efeitos instrucionais e motivacionais, e descreva de que forma lhe serviu, e/ou em que aspectos nao lhe serviu, durante o estudo, utilizando a seguinte interpretacao da escala de classificacao:

- 1 = (quase) nao tem qualquer importancia; provavelmente poderia ser dispensada
- 2 = contribui ligeiramente para o alcance da meta; nao inclusao teria tido influencia, mas nao de forma dramatica
- 3 = importante; nao inclusao teria levado a efeitos nitidamente inferiores
- 4 = de grande importancia; nao inclusao teria influenciado de forma dramatica
- 5 = de suma importancia; nao inclusao teria impossibilitado alcance dos objectivos fundamentais da instrucao/motivacao

MEIO	IMPORTANCIA INSTRUCIONAL	IMPORTANCIA MOTIVACIONAL
Documentacao distribuida antes do inicio do curso	1 2 3 4 5	1 2 3 4 5

OBSERVACOES:

MEIO	IMPORTANCIA INSTRUCIONAL	IMPORTANCIA MOTIVACIONAL
Cronograma das actividades do curso/oficina	1 2 3 4 5	1 2 3 4 5

OBSERVACOES:

MEIO	IMPORTANCIA INSTRUCIONAL	IMPORTANCIA MOTIVACIONAL
Compromisso assinado entre participante e facilitador	1 2 3 4 5	1 2 3 4 5

OBSERVACOES:

Original in Portuguese of instructional and motivational media effectiveness worksheet:
(page 3 of 5 pages)

- 1 = (quase) não tem qualquer importância; provavelmente poderia ser dispensada
 2 = contribui ligeiramente para o alcance da meta; não inclusão teria tido influência, mas não de forma dramática
 3 = importante; não inclusão teria levado a efeitos nitidamente inferiores
 4 = de grande importância; não inclusão teria influenciado de forma dramática
 5 = de suma importância; não inclusão teria impossibilitado alcance dos objectivos fundamentais da instrução/motivação

MEIO	IMPORTANCIA INSTRUCIONAL	IMPORTANCIA MOTIVACIONAL
O livro de Dick e Carey	1 2 3 4 5	1 2 3 4 5

OBSERVAÇÕES:

MEIO	IMPORTANCIA INSTRUCIONAL	IMPORTANCIA MOTIVACIONAL
Materiais instrucionais complementares (apontamentos, fichas de trabalho, etc.)	1 2 3 4 5	1 2 3 4 5

OBSERVAÇÕES:

MEIO	IMPORTANCIA INSTRUCIONAL	IMPORTANCIA MOTIVACIONAL
Os "bilhetinhos" distribuidos ao longo do curso oficina	1 2 3 4 5	1 2 3 4 5

OBSERVAÇÕES:

Original in Portuguese of instructional and motivational media effectiveness worksheet:
(page 4 of 5 pages)

- 1 = (quase) não tem qualquer importância; provavelmente poderia ser dispensada
 2 = contribui ligeiramente para o alcance da meta; não inclusão teria tido influência, mas não de forma dramática
 3 = importante; não inclusão teria levado a efeitos nitidamente inferiores
 4 = de grande importância; não inclusão teria influenciado de forma dramática
 5 = de suma importância; não inclusão teria impossibilitado alcance dos objectivos fundamentais da instrução/motivação

MEIO	IMPORTANCIA INSTRUCIONAL	IMPORTANCIA MOTIVACIONAL
0 facilitador (apoiado por quadro e retroprojector)	1 2 3 4 5	1 2 3 4 5

OBSERVAÇÕES:

MEIO	IMPORTANCIA INSTRUCIONAL	IMPORTANCIA MOTIVACIONAL
0 'Manual de Actividades'	1 2 3 4 5	1 2 3 4 5

OBSERVAÇÕES:

MEIO	IMPORTANCIA INSTRUCIONAL	IMPORTANCIA MOTIVACIONAL
Os seus colegas, com que teve a oportunidade de interagir	1 2 3 4 5	1 2 3 4 5

OBSERVAÇÕES:

Translation of instructional and motivational media effectiveness worksheet:
(introduction)

**COURSE/WORKSHOP
IN
SYSTEMATIC DESIGN OF INSTRUCTIONAL MATERIALS**

**APPLICATION EXERCISE REGARDING THE DEVELOPMENT OF AN
INSTRUCTIONAL STRATEGY: THE QUESTION OF MEDIA SELECTION**

NAME: _____

An important aspect of the development of an instructional strategy is the selection of media. In that context fundamental questions arise, such as whether, for instance, communication with the target audience should be performed using written materials, radio, TV, film, posters, pamphlets, or persons (teachers, tutors, community education agents, etc.). As you can see, in the framework of this question, persons are looked upon as media. In performing their communicating functions, they can still use the support of other media, such as the chalkboard or the overhead projector.

The inclusion of persons (teachers) in an instructional system should not be an automatic choice. Nor should it be thought that the choice of a medium like TV or film, which includes audio and visual components, is always better than a medium like radio, which does not include the visual component. The interaction between the media and the public is something rather complex. Many different aspects have to be taken into account in selecting media. These have to do with the characteristics of the media themselves, as well as with the characteristics of the target population, the instruction, and the circumstances surrounding the instruction.

As an exercise, and at the same time with a view to evaluating our course, we shall next analyze the role of the media used in the **ESMI** course/workshop. Through what we have learned we are now able to distinguish between what belongs to the area of instruction properly speaking, and that which pertains to the area of motivation. It is the combination of the two aspects which we have to take into account. Instruction to a public which is not motivated to learn will fail. On the other hand, a motivated public is badly served by materials the instructional value of which is minimal.

In the **ESMI** course/workshop the following media were used:

1. Documentation distributed before the beginning of the course
2. The Gantt chart of the course/workshop activities
3. The contract signed between the participant and the facilitator
4. The Dick and Carey book
5. The additional instructional materials (printed lecture notes, worksheets, etc.)
6. The "little notes" distributed all along the course/workshop
7. The facilitator (with the support of chalkboard and overhead projector)
8. The Activities Manual
9. Your colleagues, with whom you had the opportunity to interact during the course.

As regards those media, what has been the importance of their role in instruction and in motivation? On the following worksheet indicate the importance, separately for the two purposes, on a 5-point scale with the following interpretation:

- 1: had (almost) no importance whatsoever; could probably have been done away with
- 2: contributed moderately to achieving the goal; not including it would have had influence, but not dramatically
- 3: important; not including it would have resulted in clearly reduced effects
- 4: of great importance; not including it would have affected the instructional/motivational results in a dramatic way
- 5: of extreme importance; not including it would have made it impossible to reach the main instructional/motivational goals.

In a few words, justify your response in the space provided for observations. If you still have other observations with respect to the media used in the **ESMI** course/workshop, or about the integrated whole of those media, write them on the last sheet.

Translation of instructional and motivational media effectiveness worksheet:
(text of the worksheet)

The introductory paragraph of the worksheet reads as follows:

In implementing the **ESMI** course/workshop different media were used. Of each of the media listed below, classify its importance for instructional and motivational purposes, and describe in what way it has been useful to you, and/or in what respects it has not been useful to you, during your studies, using the following interpretation of the classification scale:

- 1 = has (almost) no importance whatsoever; could probably be done away with
- 2 = contributes moderately to achieving the goal; not including it would have been of influence, but not dramatically
- 3 = important; not including it would have given rise to clearly inferior results
- 4 = of great importance; not including it would have affected the results in a dramatic way
- 5 = of extreme importance; not including it would have made it impossible to reach the main instructional/motivational goals.

The interpretation of the classification scale is repeated at the top of each of the pages on which students are requested to classify the media used. The introductory paragraph is followed by prompts using the format presented below for the first medium mentioned.

MEDIUM	INSTRUCTIONAL IMPORTANCE	MOTIVATIONAL IMPORTANCE
Documentation distributed before the beginning of the course	1 2 3 4 5	1 2 3 4 5

OBSERVATIONS:

The above format is repeated for each of the other media, listed below in the order in which they appear on the worksheet:

- The Gantt chart of the course/workshop activities
- The contract signed between the participant and the facilitator
- The Dick and Carey book
- The additional instructional materials (printed lecture notes, worksheets, etc.)
- The "little notes" distributed all along the course/workshop
- The facilitator (with the support of chalkboard and overhead projector)
- The 'Activities Manual'
- Your colleagues, with whom you had the opportunity to interact.

The text on the last page reads:

OTHER OBSERVATIONS with respect to the media used in the **ESMI** course/workshop.

APPENDIX 5

Example of open-ended questionnaire used to assess students' perception of importance of course content learned:

- 1) original in Portuguese
- 2) translation in English.

This was the last of three end-of-course questionnaires. The students completed it during the last class session, after having been prepared for it through a homework assignment.

Original (in Portuguese) of perceived course content importance questionnaire:



CURSO/OFICINA
EM
ELABORACAO SISTEMICA DE MATERIAL INSTRUCIONAL

AVALIACAO DO CURSO/OFICINA

Durante quase tres meses participou no curso/oficina ESMI. Que significou isto para si? Aprendeu aquilo que o curso pretendia ensinar? Aprendeu aquilo que voce esperava aprender? Ou aprendeu ainda coisas que ninguem pensou que aprendesse alem dos seus ou dos meus objectivos?

A seguir, faça a listagem dos cinco aspectos mais importantes da sua aprendizagem no curso/oficina ESMI:

1. _____

2. _____

3. _____

4. _____

5. _____

Translation of *perceived course content importance questionnaire*:

**COURSE/WORKSHOP
IN
SYSTEMATIC DESIGN OF INSTRUCTIONAL MATERIALS
EVALUATION OF THE COURSE/WORKSHOP**

For almost three months you have participated in the **ESMI** course/workshop. What has it meant for you? Did you learn the things the course intended to teach? Did you learn what you yourself had hoped you would learn? Or did you learn yet other things, beyond your and my objectives, which no one thought you would learn?

Below, make a list of the five most important aspect of what you have learned in the **ESMI** course/workshop.

1. _____

2. _____

3. _____

4. _____

5. _____

APPENDIX 6

Structured post-instructional interview, used for student debriefing:

- 1) original in Portuguese
- 2) translation in English.

This interview was used in debriefing a selection of the students who had participated in the course. Before the interview started, students would read the introductory paragraph and sign it. Students would not be shown the questions they were going to be asked.

Original (in Portuguese) of structured post-instructional interview:

Stud.Debrief.02

Esta entrevista faz parte da avaliacao formativa do curso/oficina ESMI. Ja sabe qual e a importancia da avaliacao formativa. Entende portanto tambem que as suas respostas devem ser tao honestas quanto possivel.

Nesta entrevista sera dada uma atencao especifica a alguns aspectos do curso/oficina. Se, no entanto, tiver mais outras observacoes, deve sentir-se perfeitamente livre em expressar-se sobre elas.

Os dados que fornecera nesta entrevista serao utilizados exclusivamente para efeitos de investigacao cientifica. Em quaisquer publicacoes de estudos baseados nestes dados, mantiver-se-a o anonimato da sua contribuicao.

Com o fim de facilitar o registo da informacao fornecida por voce, a entrevista sera gravada.

Concordo com os procedimentos acima descritos:

Maputo, ___/___/ 89 Nome: _____ Assinatura: _____

- 1) Percepcao do curso:
 - a) Como ve o actual curso em relacao a outros cursos a que ja assistiu?
 - b) Se ainda nao respondeu em (a): Trata-se de algo diferente de qualquer outro curso a que ja assistiu, ou era basicamente semelhante as suas experiencias como estudante em outros cursos? Se diferente, que diferencas notou?
 - c) Se ainda nao respondeu em (a) ou (b): Comparando este curso com qualquer outro, notou alguma diferenca no seu proprio comportamento? Qual ou quais?
- 2) O curso era pesado, o seu regime de trabalho intensivo, as suas exigencias altas, e as circunstancias da sua realizacao nao eram as mais facéis.
 - a) O que e que lhe ajudou mais em continuar a esforcar-se para o curso?
 - b) Se ainda nao respondeu em (a), quais os aspectos do curso que lhe ajudaram mais em continuar a esforcar-se para o curso?
- 3)
 - a) Notou alguma diferenca no seu proprio comportamento (habitos) antes e no fim do curso?
 - b) Notou alguma diferenca no comportamento (habitos) dos seus colegas antes e no fim do curso?
- 4) Desde o inicio do curso ate ao fim, utilizei um sistema de comunicacao com os participantes em grande parte atraves daqueles bilhetinhos (mostrar exemplo neutro).
 - a) Como e que isto funcionou para si? Que efeitos notou?
 - b) Como e que isto funcionou para os seus colegas? Que efeitos notou?
 - c) E capaz de me descrever alguns desses bilhetinhos que recebeu (aparencia, conteudo)? Porque e que se lembra deles?
 - d) Tem sugestoes para melhorar aquele sistema dos bilhetinhos?
- 5) O curso era pesado, intensivo, exigente, e realizou-se em condicoes nao muito ideais. Existia, por isso, bastante razao para uma pessoa perder a sua motivacao e nao continuar, ou nao se esforcar o suficiente.
 - a) Acha que se atendeu adequadamente a necessidade de o participante se sentir motivado? No seu caso? No caso dos outros?
 - b) Lembra-se momentos de desmotivacao? Quais? Como conseguiu recuperar a sua motivacao? Os bilhetinhos tinham alguma importancia a esse respeito? Qual?
 - c) Lembra-se momentos de desmotivacao por parte de alguns dos seus colegas? Quais? Como conseguiram estes recuperar a sua motivacao? Seria justificado atribuir alguma importancia ao papel dos bilhetinhos nesses casos? Qual?
 - d) Que conselhos tem para, num futuro curso com caracteristicas semelhantes, atender melhor a problematica da motivacao?
- 6) Que outros aspectos deveriam ter sido tocados nesta entrevista?

Translation of structured post-instructional interview:

Stud.Debrief.02

This interview is part of the formative evaluation of the **ESMI** course workshop. You know already how important the formative evaluation is. You will therefore also understand that your answers should be as honest as possible.

In this interview specific attention will be paid to some aspects of the course. If, however, you still have other observations you would like to make, you should feel absolutely free to do so.

The data which you will provide in this interview will be used exclusively for scientific research purposes. In any publications of studies based on these data the anonymity of your contribution will be maintained.

In order to facilitate registering the information provided by you, the interview will be recorded.

I agree with the procedures described above:

Maputo, ___/___/89 Name: _____ Signature: _____

- 1) Perception of the course:
 - a) How do you see the present course in relation to other ones which you attended in the past?
 - b) If not yet responded under (a): Do we have to do with something different from any other course you attended, or was it basically similar to your experiences as a student in other courses? If different, what differences did you notice?
 - c) If not yet responded under (a) or (b): Comparing this course with any other one, did you notice any difference in your behavior? What difference(s)?
- 2) The course was a heavy one, it required intensive work, it was highly demanding, and it was given in circumstances that were not the most easy ones.
 - a) What has helped you most to continue the effort you were putting into the course?
 - b) If not yet responded under (a): what aspects of the course helped you most to continue the effort you were putting into it?
- 3)
 - a) Did you notice any difference in your own behavior (habits) before and at the end of the course?
 - b) Did you notice any difference in the behavior (habits) of your colleagues before and at the end of the course?
- 4) Since the beginning of the course until the end of it I have used a system to communicate with the participants largely by means of those little notes (show neutral example).
 - a) How did this work for you? What effects did you notice?
 - b) How did this work for your colleagues? What effects did you notice?
 - c) Are you able to describe some of the little notes you received (appearance, content)? Why do you remember them?
 - d) Do you have suggestions to improve that system of little notes?
- 5) The course was a heavy one, it was intensive, demanding, and it was given in conditions that were not very ideal. There was therefore quite some reason why people would lose their motivation and not continue, or not put a sufficient effort into it.
 - a) Do you think adequate attention was paid to the need that a participant would feel motivated? In your case? In that of the other participants?
 - b) Do you remember occasions when you had lost your motivation? What were these occasions? How did you succeed recapturing your motivation? Were the little notes of any importance in that respect? What was that importance?
 - c) Do you remember occasions when your colleagues had lost their motivation? What were these occasions? How did these colleagues succeed recapturing their motivation? Would it be justified to attribute any importance to the role of the little notes in those cases? What importance would that have been?
 - d) What advice do you have to attend better to the question of motivation in the case of a future course with similar characteristics?
- 6) What other aspects should have been touched upon in this interview?

APPENDIX 7

Data base of ESMI motivational messages research:

- 1) audio recordings
- 2) course related written documentation
- 3) circumstantial documentation
- 4) photographic documentation
- 5) researcher and research assistants' field notes.

Data included in this appendix mostly refer to the ESMI-2 workshop held in 1989. However, reference will also be made to data, somewhat less systematically and certainly less extensively, collected during the implementation of the earlier ESMI-1 workshop, held in 1986, with which the ESMI-2 workshop is integrated in a common embedded multiple-case perspective.

CONTENTS OF THE ESMI-1/ESMI-2 DATA BASE
OF
RESEARCH ON THE EFFECTIVENESS OF MOTIVATIONAL MESSAGES

1. **AUDIO RECORDINGS**

One compact cassette (CC) was recorded during the implementation of the research on the effectiveness of motivational messages in the ESMI-1 case (1986). A total of 50 micro-cassettes (MC) with a recording capacity of 120 minutes each were recorded during the implementation of the research on the ESMI-2 case. All this raw material has been included in the data base on the above research. In the content description below the single compact cassette will be referred to as section AR001. The micro-cassettes have been numbered MC-01 to MC-50. They will be referred to by section numbers ranging from section AR002 (= MC01) to AR0051 (= MC50), each section corresponding to one micro-cassette.

Not always were events recorded in their entirety. E.g., when group work was going on in class sessions it would have been of little use to record this. In some cases also, small portions of given events have not been recorded due to human or technical failure. All recordings are in Portuguese.

1.1 Recordings of class sessions

1.1.1 Final class session ESMI-1 (round-table discussion):

Data Base Item:	Date:	Description:	Section:
1.1.1.001	12/19/86	Final session (course evaluation)	AR001

1.1.2 Regular class sessions ESMI-2:

Data Base Item:	Date:	Description:	Section:
1.1.2.001	89/04/28	Inaugural session	AR003
1.1.2.002	89/05/09	Session 1a	AR003/04
1.1.2.003	89/05/12	Session 1b	AR004
1.1.2.004	89/05/16	Session 2a	AR004/05
1.1.2.005	89/05/19	Session 2b	AR005
1.1.2.006	89/05/26	Session 3a-1	AR007
1.1.2.007	89/05/27	Session 3a-2	AR007
1.1.2.008	89/05/30	Session 3b	AR007
1.1.2.009	06/02/89	Session 4a	AR009

Regular class sessions ESMI-2 (continued):

Data Base Item:	Date:	Description:	Section:
1.1.2.010	89/06/06	Session 4b	AR009/10
1.1.2.011	89/06/09	Session 5a	AR011/12
1.1.2.012	89/06/13	Session 5b	AR012
1.1.2.013	89/06/16	Session 6a	AR012/13
1.1.2.014	89/06/20	Session 6b	AR014
1.1.2.015	89/06/23	Session 7a	AR016
1.1.2.016	89/06/27	Session 7b	AR017
1.1.2.017	89/06/30	Session 8a	AR018/19
1.1.2.018	89/07/04	Session 8b	AR019
1.1.2.019	89/07/07	Session 9a	AR019/20
1.1.2.020	89/07/11	Session 9b	AR020
1.1.2.021	89/07/14	Session 10a	AR021
1.1.2.022	89/07/18	Session 10b	AR022/23

1.1.3 Open class sessions ESMI-2 (voluntary participation):

Data Base Item:	Date:	Description:	Section:
1.1.3.001	89/05/18	2nd open session	AR006
1.1.3.002	89/05/29	3rd open session	AR008
1.1.3.003	89/06/08	4th open session	AR010/11
1.1.3.004	89/06/22	5th open session	AR015
1.1.3.005	89/06/29	6th open session	AR017/18
1.1.3.006	89/07/06	7th open session	AR019
1.1.3.007	89/07/13	8th open session	AR020/21

1.1.4 Supplementary class sessions ESMI-2 (offered following last regular class session, particularly for students who had not yet completed all assignments):

Data Base Item:	Date:	Description:	Section:
1.1.4.001	89/07/21	1st supplementary session	AR024
1.1.4.002	89/07/25	2nd supplementary session	AR024/25
1.1.4.003	89/07/28	3rd supplementary session	AR025
1.1.4.004	89/08/04	5th supplementary session	AR027

1.2 Recordings of work sessions with research assistants

1.2.1 Research debriefings:

Data Base Item:	Date:	Description:	Section:
1.2.1.001	89/05/13	Research debriefing # 01	AR028
1.2.1.002	89/05/20	Research debriefing # 02	AR028/29
1.2.1.003	89/05/29	Research debriefing # 03	AR029
1.2.1.004	89/06/03	Research debriefing # 04	ARO29/30
1.2.1.005	89/06/07	Research debriefing # 05	AR030
1.2.1.006	89/06/12	Research debriefing # 06	AR031
1.2.1.007	89/06/17	Research debriefing # 07	AR031/32
1.2.1.008	89/06/24	Research debriefing # 08	AR032
1.2.1.009	89/06/25	Research debriefing # 09	AR033/34
1.2.1.010	89/07/01	Research debriefing # 10	AR034
1.2.1.011	89/07/10	Research debriefing # 11	AR035
1.2.1.012	89/07/18	Research debriefing # 12	AR035/36
1.2.1.013	89/09/23	Research debriefing # 13	AR037

1.2.2 Work session between research assistants:

Data Base Item:	Date:	Description:	Section:
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1.2.2.001	89/08/17	Preparation RA report	AR038
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1.3 **Structured contact with participating (candidate) students and organizational entities**

1.3.1 Post-instructional interviews with students:

Data Base Item:	Date:	Description:	Section:
1.3.1.001	89/06/28	Interview with Student 06	AR040
1.3.1.002	89/06/30	Interview with Student 30	AR040
1.3.1.003	89/07/17	Interview with Student 09	AR042
1.3.1.004	89/07/24	Interview with Student 04	AR043
1.3.1.005	89/08/14	Interview with Student 21	AR043
1.3.1.006	89/08/17	Interview with Student 32	AR044
1.3.1.007	89/09/01	Interview with Student 27	AR047
1.3.1.008	89/09/04	Interview with Student 20	AR048
1.3.1.009	89/09/06	Interview with Student 17	AR048/49
1.3.1.010	89/09/24	Interview with Student 12	AR049

1.3.2 Debriefings with Organizational Entities S and U (discrete recording):

Data Base Item:	Date:	Description:	Section:
1.3.2.001	89/08/10	Debriefing Entity U	AR044
1.3.2.002	89/08/07	Debriefing Entity S	AR045

1.4 Recordings made during organized events

1.4.1 Meetings related to organizational Entity P:

Data Base Item:	Date:	Description:	Section:
1.4.1.001	89/04/21	Staff meeting	AR002
1.4.1.002	89/06/26	Meeting with Vice-Minister	AR039
1.4.1.003	89/06/26	Meeting with Vice-Minister and external consultant to Entity P	AR039
1.4.1.004	89/07/03	Informal meeting involving Students 20 and 11 + foreign visitor	AR041
1.4.1.005	89/08/01	Staff meeting	AR026

1.4.2. ESMI related organized events:

Data Base Item:	Date:	Description:	Section:
1.4.2.001	89/07/21	End-of-course party (speeches + conversations with Students 12, 14, 25, 27)	AR042
1.4.2.002	89/08/11	First multi-sectoral meeting about implementation ESMI	AR046
1.4.2.003	89/09/16	Graduation ceremony for ESMI-1 and ESMI-2 students	AR050
1.4.2.004	89/09/20	Second multi-sectoral meeting about implementation ESMI	AR051

1.5 Recordings of occasional contacts with individuals

1.5.1. Contacts with students:

Data Base Item:	Date:	Description:	Section:
1.5.1.001	89/06/23	Part of conversation with Student 31	AR016
1.5.1.002	89/07/19	Conversation with Student 25	AR042
1.5.1.003	89/08/01	Part of conversation with Student 03 during time reserved for supplementary session	AR025
1.5.1.004	89/08/04	Part of conversation between Student 05 and directorate of Entity P + researcher	AR027
1.5.1.005	89/08/08	Conversation with Student 09 about project visited by her	AR027
1.5.1.006	89/08/28	Conversation with Student 20	AR047

1.5.2

Contacts with non-students:

Data Base Item:	Date:	Description:	Section:
1.5.2.001	89/07/03	Conversation (in Dutch) with external consultant in area of research training to Entity S	AR041
1.5.1.002	89/07/19	Part of conversation with external consultant to Entity P about end of course evaluation discussion	AR042
1.5.2.003	89/08/10	Conversation with former ESMI-1 student who worked for some time at Entity P	AR027

2. COURSE RELATED WRITTEN DOCUMENTATION

Course related documentation has been collected from both the ESMI-1 course, conducted in 1986, and the ESMI-2 course, held in 1989. Information contained in the data base concerning the ESMI-1 course will be merely summarized here, as it has already been analyzed and the results presented earlier (Visser & Keller, 1989).

Due to a more specifically defined research interest, course related written documentation collected while the ESMI-2 course was being conducted, is more extensive, and at times more detailed than that about the ESMI-1 case. The content of the documentation available in the ESMI-2 data base will therefore be presented here both in a itemized form, so as to facilitate making specific references to it, and to aid future researchers in using it, as well as in a summarized form.

Most data, both as regards the ESMI-1 and the ESMI-2 case, exist, besides the hard copy version, also in digitized form on diskette. This facilitates easy reprocessing of particularly the instructional and motivational materials available for future instructional/motivational applications. In fact, some of the materials used in the ESMI-2 case are identical to the ones developed for the ESMI-1 case, while other materials were developed on the basis of existing ESMI-1 materials, yet other materials are entirely new.

- 2.1 **Summary overview of course related written documentation pertaining to the ESMI-1 case**
- 2.1.1 30 motivational messages, a detailed overview of 22 of which can be found in Visser & Keller (1989). Of the remaining 8 messages, 5 did not pertain to the research interest of the earlier study, while the other 3 had not been identified as such, but should, in the light of the ESMI-2 case, be looked upon as motivational messages.
- 2.1.2 A full collection of all instructional materials used in the course.
- 2.1.3 Planning notes related to some of the class sessions.
- 2.1.4 Administrative documentation, particularly related to student attendance.
- 2.1.5 All tests used for the course, complete with their answer sheets and keys to correction, as well as students' responses to the test questions and analyses of errors and results.
- 2.1.6 All student products (reports of individual ESMI-Projects) and detailed evaluation of each of them.

- 2.1.7. A full set of all questionnaires (1 initial, 8 weekly, and 3 end-of-course) used during the course and student responses to them, as well as analysis results of the responses to the three end-of-course questionnaires.
- 2.1.8 Correspondence with educational authorities involved in connection with certification of completing students.

2.2 Overview of course related written documentation pertaining to the ESMI-2 case

This part of the data base contains documents related to the following areas:

- 1) Motivational communication (132 items)
- 2) Instructional intervention (27 items)
- 3) Course planning (11 items)
- 4) Course administration (12 items)
- 5) Student assessment (10 items)
- 6) Student projects (4 items)
- 7) Questionnaires, interviews, evaluative discussions (17 items)
- 8) Correspondence concerning the course/workshop (1 item)
- 9) General documents (5 items).

Each of these areas will be described in detail on the following pages. It is to be observed that the distinction between the areas of *motivation* and *instruction* is sometimes not very clear. One document may include aspects pertaining to both areas. The criterion followed in separating the documents has been the intent of the designer. Some instructional documents were unobtrusively used for research purposes. They are listed under instructional intervention, rather than as questionnaires. Documents can be located in the data base according to their section number.

2.2.1 Course related written documentation pertaining to the area of motivational communication:

Data Base Item:	Description:	Section:
2.2.1.001	MM-1: Brochure about workshop distributed before beginning of course.	CR005
2.2.1.002	MM-2: Announcement inaugural session, drawing attention to need to comply in full with course requirements.	CR008
2.2.1.003	MM-3: Gantt chart, specifying activities and deadlines.	CR009
2.2.1.004	MM-4: Initial package of course materials.	CR010
2.2.1.005	MM-5: Contract (2 versions of model + completed/signed copies).	CR015
2.2.1.006	MM-6: Announcing session 1a, congratulating students with signing contract, calling for readiness, determination, and careful planning, drawing attention to Activities Manual.	CR016
2.2.1.007	MM-6/6A-psd: Personalized version of above for students who had not yet signed contract and one who started course under particularly difficult circumstances.	CR017
2.2.1.008	Letter accompanying MM-6 for the above student.	CR018
2.2.1.009	MM-7: Second announcement session 1a, one day before it was held.	CR019
2.2.1.010	MM-7-psd: For 2 candidates who had never turned up, 1 special student, and 2 invitees.	CR020

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.011	MM-8-psl: In 2 different copies for 2 students who were traveling to the interior and therefore had to interrupt their course work.	CR026
2.2.1.012	MM-9: Communicating (reinforcing awareness of) change in set time for class meetings, announcing some of the activities for session 1b, comforting as regards difficulties in studying.	CR027
2.2.1.013	MM-9-psd: As above, with some additional info for number of students.	CR028
2.2.1.014	MM-10-psl: Special encouragement for research assistant facing nearly impossible circumstances.	CR029
2.2.1.015	MM-11: Message about danger of confounding means and ends and importance systems approach in that respect, specially directed at group of students involved in professional activity where this was happening. Later extended to other students as well.	CR030
2.2.1.016	MM-12-psl: Special message to one student with high test anxiety.	CR031
2.2.1.017	MM-13: Handed to students on completing Test 1, marking mileage, and indicating next mile stone and how to prepare for it.	CR033
2.2.1.018	MM-14-psd: Feedback Test 1 (general + criterion referenced details per student).	CR036

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.019	MM-15-psl: Interpretative feedback regarding Test 1 to all students.	CR037
2.2.1.020	MM-16: Directed at limited number of students who had not been able to participate in session 2a, inviting them to open session.	CR040
2.2.1.021	MM-17-psl: Individual feedback about ESMI-project proposals + list of dates handing in proposal and receipt of FB.	CR042
2.2.1.022	MM-18-psd: Directed to students who had not handed in their proposals in time, expressing understanding and reminding that facilitator could not comply with contract if students did not; personalized for some students.	CR043
2.2.1.023	MM-19-psd: Feedback Test II (general + criterion referenced details per student.	CR049
	Some of the above with additional motivational info.	CR053
2.2.1.024	MM-20: Offering possibility to write Test II to some students who had been unable to attend regular session.	CR050
2.2.1.025	MM-21-psl: Personal message to RA who had been unable to prepare for Test II, providing detailed help.	CR052
2.2.1.026	MM-22 & MM-22-psd: Giving advice as regards preparation for Test III; personalized to some, reminding to hand in project proposals.	CR055

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.027	MM-23-psl: Urging some students who had not yet taken Test II, to do so.	CR056
2.2.1.028	MM-24: Distributed during period of absence of facilitator, providing guidance and encouragement as regards carrying out instructional analysis for individual ESMI project.	CR058
2.2.1.029	Note from student communicating his difficulties to appear in class	CR059
2.2.1.030	MM-25: Urgent memo to students who had not attended Session 3a (1st part) that 2nd part would be held next day + info on what to expect.	CR060
2.2.1.031	MM-26: Group photograph taken first day of course, encouraging students to persevere to the end.	CR061
2.2.1.032	MM-27-psl: Directed to RA, following failure to obtain satisfactory result on Test II, offering comfort, possible interpretations, and advice.	CR062
2.2.1.033	MM-28 & MM-28-psd: Feedback Test III (general + criterion referenced details per student) and reminder that continued strong effort remains necessary. Additional individual encouragement in two cases.	CR065
2.2.1.034	MM-29-psl: Personal memo to student who had not been able to prepare properly for Test III. Interpretative evaluation of work presented.	CR066

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.035	Copy of answer sheet one student, showing terminology that may reveal influence from MM's.	CR071
2.2.1.036	Non-MM: Communication about planned dates for visit to Schoolbook Publishing House in format of MM.	CR072
2.2.1.037	MM-30 = personalized non-MM mentioned above, trying to re-establish contact with 3 students whose attendance had been very irregular.	CR073
2.2.1.038	MM-31-psl: directed to two students going out on mission, wishing them well + encouragement not to forget ESML.	CR074
2.2.1.039	Personal note to special student who, for reasons related to his work, had been unable to attend class, to present him exercise sheet (see 2.2.2.009) to work on + advice to work on report.	CR076
2.2.1.040	MM-32: Marking mileage after 3 tests, announcing that diploma will be issued, emphasizing need continued effort, making reference to professional ties, giving advice about how to continue.	CR079
2.2.1.041	MM-33 & MM-33-psd: Introduction to instructional text distributed (see 2.2.2.011). Personalized version for one student, inquiring about how work is going, including interactive part.	CR081

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.042	MM-34-psl: Two messages directed at students participating in difficult circumstances, encouraging them to go on, because of good results already obtained (one MM interactive).	CR082
2.2.1.043	MM-35: Communicating availability bibliographic material + offer help by phone + advice on how to organize difficult task performance.	CR086
2.2.1.044	MM-36-psl: Directed to student traveling abroad for several weeks, wishing well, encouraging to look for applications of what has been learned, referring to career possibilities, suggesting what to do after return.	CR087
2.2.1.045	Message sent to facilitator by RA, expressing confidence in his being successful + MM-37: in return, expressing gratitude.	CR088
2.2.1.046	MM-38-psl: Personal message accompanying FB Test 1 for special student not attending classes. Interpretative comments. Facilitator response to motivational status questionnaire (see 2.2.7.009).	CR095
2.2.1.047	MM-39-psl: Interpretative FB Test III student who had been away for considerable time. Advice as to what to give priority.	CR096
2.2.1.048	MM-40: Invitation to dinner, marking completion first half of course	CR098

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.049	MM-41 & MM-41-psd: Marking mid-way point in course, giving explanation about use Activities Manual, offering telephone guidance, marking mileage. Additional message for individuals who were behind in their progress.	CR101
2.2.1.050	MM-42-psl: Individual interpretative feedback to all students regarding Report I, emphasizing achievement in form of first product.	CR103
2.2.1.051	Communication in return from student who presents article which she says she now understands better thanks to what she has learned in the course.	CR104
2.2.1.052	List of students intending to participate in ESMI dinner.	CR106
2.2.1.053	MM-43: Menu ESMI dinner, expressed in technical vocabulary of the course.	CR107
2.2.1.054	MM-44 & MM-44-psd: Presentation of newspaper clipping interpretable in terms of acquired knowledge. Personalized for several students who received latest handout together with MM, as they had not been able to attend classes.	CR111
2.2.1.055	MM-45-psl: Wishing well to special student going on vacation, expressing expectation to continue work with her after her return.	CR112

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.056	MM-46-psl: Interactive message to student who had long been unable to attend classes, offering possibility to leave the course + response.	CR113
2.2.1.057	MM-47: Communicating that class attendance is considered motivating by fellow students, according to responses questionnaires, requesting students to be in time for class + announcing continuation discussion about motivation.	CR114
2.2.1.058	MM-48-psl: Saluting RA on mission in the provinces, reminding her that she will not be forgotten by her colleagues, and calling to look for applications of what she has learned. MM-48-psl-annex: Applying instructional analysis principles to event in the region where she is working.	CR117
2.2.1.059	MM-49-psl: Welcome to student returning from foreign travel + advice for reintegration.	CR118
2.2.1.060	MM-50 & MM-50-psd: Presentation real world case showing dramatic results of application instructional analysis + learner will gain professional prestige by applying newly acquired knowledge. Personal notes for students who had been absent.	CR120
2.2.1.061	MM-51-psl: Wishing well to first student completing course and going on vacation abroad.	CR121

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.062	MM-52-psl: Message to RA on return to make her feel her contributions are in demand.	CR122
2.2.1.063	MM-53-psl: Congratulations to first completing student regarding report produced + another exercise by mail.	CR123
2.2.1.064	MM-54-psl-interactive + response + MM-54-psl-bis: Exchange of messages with student who has not attended most of the classes, trying to find possibility to meet.	CR126
2.2.1.065	MM-55-psl: Reminder of meeting with student.	CR127
2.2.1.066	Student communicating she will be absent in session 8a.	CR128
2.2.1.067	MM-56-psl: Giant MM on arrival back from mission of special student who is mostly traveling, urging to stop the practice.	CR130
2.2.1.068	MM-57-psl: Congratulations on birthday wife RA.	CR131
2.2.1.069	MM-58: Presentation real world case of application of acquired knowledge with great success; interpretation; importance of approach for professionals working in field of education.	CR132
2.2.1.070	MM-59 & MM-59-psd: At 20 % from finish, however differences in difficulty to reach goal. Need to think of training as continuous process, not static event.	CR137

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.071	MM-60: Multiple access message, directed at different segments of the audience, providing guidance, understanding, and encouragement.	CR138
2.2.1.072	MM-61-psl: Interpretative comments about performance on Test I, accompanying criterion-referenced feedback, to special student who wrote that test.	CR139
2.2.1.073	MM-62-psl: Congratulations (by mail) to student abroad who finished course, appreciating contributions made.	CR140
2.2.1.074	MM-63-psl: Message catching RA on her way to mission in provinces, urging to return as soon as possible, as she is needed by her colleagues.	CR144
2.2.1.075	MM-64-psl: Interpretative comments about performance on Test III, accompanying criterion-referenced feedback, to student who had not attended most classes, who wrote test six weeks late.	CR145
2.2.1.076	MM-65: Appeal to take advantage of last three sessions of course, indicating what will be done + emphasis on transfer course environment to professional association of participants.	CR146
2.2.1.077	Reminder to three students to hand in copy of their Report I (in MM format).	CR150

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.078	MM-66: Directed at 4 students who had not attended class session, stressing importance of their opinion, requesting to complete questionnaire (see 2.2.7.013).	CR151
2.2.1.079	MM-67: Calling attention to last open class session + question how to continue after course is over.	CR154
2.2.1.080	MM-68: Expectancy arousal last session + learning does not stop with completion course. How to continue?	CR157
2.2.1.081	MM-69: Homework reminder sent to students who were not present in previous class session.	CR158
2.2.1.082	MM-70: Marking mileage (approach of finish), however some still to complete project + call to come prepared for evaluation course and discussion future.	CR160
2.2.1.083	Request to one student to complete questionnaires applied during session 10b, in which student had been absent.	CR164
2.2.1.084	MM-72: Interactive message to allow students to redefine deadlines for assignments due, emphasizing need to carefully and realistically plan time + reassurance continued support facilitator.	CR164
2.2.1.085	MM-73: Agreement signed by facilitator as regards proposed new deadlines (copies of all new proposals made + overview).	CR165

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.086	MM-74: The 5th component of the instructional strategy: supplementary sessions + work session on implementation of ESMI methodology.	CR167
2.2.1.087	"Little notes" prepared by 6 students and offered to facilitator during social event organized at their initiative.	CR168
2.2.1.088	Five wall posters prepared by students for above event.	CR169
2.2.1.089	MM-75-psl: To student who had missed most classes, but still wanted to continue, following failure to honor appointment, communicating that student would continue to be considered as such, unless otherwise informed, implicitly offering student possibility to withdraw.	CR170
2.2.1.090	MM-76: Communicating details about supplementary sessions, planned session to discuss implementation, graduation, and event encompassing ESMI-1 and ESMI-2 participants + call for self-discipline in complying with new deadlines.	CR171
2.2.1.091	Note by RA written at 04:00 a.m., accompanying first draft Report I, just finished before going on mission to provinces, suggesting ways of contact about assessment by phone and through traveling person.	CR172
2.2.1.092	MM-77-psl: To RA above, encouraging her to continue + appreciation + advice.	CR173

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.093	MM-78-psl: Feedback Test II for student who had started more than month late + encouragement to go ahead preparing for Test III.	CR174
2.2.1.094	MM-79-psl: Call to get in touch in view of not meeting deadline for Report II.	CR175
2.2.1.095	MM-80: Change of date meeting on implementation ESMI, raising questions to be discussed + looking forward to future perspectives.	CR176
2.2.1.096	MM-81-psl: Advice to special student, who had been abroad for long period, about how to proceed with aspect of Report I.	CR177
2.2.1.097	MM-82-psl: Renewed call to student targeted in MM-79-psl (see 2.2.1.094).	CR178
2.2.1.098	MM-83-psl: Communicating to RA that she should set priorities and decide whether to complete course, explaining there are reasons to do so, suggesting possibility to team up + annex.	CR179
2.2.1.099	MM-84-psl: Thanks to RA for participation in meeting on ESMI implementation, despite her having been allowed leave to recover from effects of excessive work load.	CR181
2.2.1.100	Note to student accompanying two photographs taken of him during Session 10b.	CR182

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.101	MM-85-psl-a/b: Explicitly offering possibility to withdraw to two students, in view of long period of absence from the course environment.	CR183
2.2.1.102	MM-86-psl: Advising RA on attitude to take toward developing her module, intending to reduce anxiety.	CR184
2.2.1.103	MM-87-psl-a/b: Accepting change of deadlines, emphasizing need for personal sacrifice, urging to keep in touch, placing required effort against background of results already obtained (2 students).	CR185
2.2.1.104	MM-88-psl: Dinner invitation to two ESMI-1 graduates, studying abroad, on vacation in Mozambique.	CR186
2.2.1.105	MM-89-psl: To RA, advising on what to do to complete Report I + offering concrete possibility to withdraw, giving deadline for decision.	CR187
2.2.1.106	Reply student to MM-85-psl-b (see 2.2.1.101), withdrawing from course + explaining difficulties encountered.	CR188
2.2.1.107	MM-90-psl: Accompanying feedback Test III for student who had entered course more than one month late, evaluating total result 3 tests obtained in context of work situation.	CR189
2.2.1.108	MM-91-psl: Directed at student facing demotivating work situation. ESMI related advice to cope with it.	CR190

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description	:Section:
2.2.1.109	Page from module designed by student, showing use of ESMI logo outside course environment.	CR191
2.2.1.110	MM-92-interactive: Formulating ideas concerning graduation, and as regards continuation after termination course activities, inviting participants to react + annex.	CR192
2.2.1.111	MM-93-interactive: Similar to MM-92, but directed to former ESMI-1 students, inviting them to graduation ceremony and join the enlarged group of ESMI graduates + invitation to react. Personalized additional info to one student now studying in Brazil.	CR193
2.2.1.112	Six reactions to MM-92/93.	CR194
2.2.1.113	Message received from RA dated 89-06-24 and 89-08-31.	CR195
2.2.1.114	Proposed program graduation ceremony as sent to minister.	CR196
2.2.1.115	Note from secretary to director of Entity Q.	CR197
2.2.1.116	MM-94: To last two students who were still working on Report II. Expressing satisfaction with progress made in difficult circumstances, enhancing awareness of proximity of final goal.	CR198
2.2.1.117	MM-95-psl: To one of above students (RA), left between windscreen wipers: "Keep it up, you are almost there".	CR199

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.118	Message, in format of MM, prepared by RA, expressing gratitude for facilitator support at handing in Report + affirmation now to be part of real ESMI community.	CR200
2.2.1.119	Dedication in above report to colleagues and facilitator + thanks to testing audience + affirmation of motivation to continue work beyond course context.	CR201
2.2.1.120	Two examples of motivational messages used by above student in communicating with testing audience.	CR202
2.2.1.121	MM-96: Invitation to graduation ceremony + party for ESMI-1 and ESMI-2 students.	CR203
2.2.1.122	Documentation related to graduation ceremony.	CR204
2.2.1.123	MM-97-psl: Info regarding possibilities for further study in the area, in accordance with student's expressed interest, accompanying feedback Report II.	CR205
2.2.1.124	MM-98: Call to ESMI-1 + ESMI-2 graduates to participate in 2nd meeting about ESMI implementation + visual recall of past experience.	CR206
2.2.1.125	MM-99: Change of address facilitator, mentioning possibility to remain in touch.	CR208

Course related written documentation pertaining to the area of motivational communication (continued):

Data Base Item:	Description:	Section:
2.2.1.126	Memo to newly created committee for the advancement of ESMI, promising various forms of support and expressing desire to maintain contact.	CR209
2.2.1.127	MM produced by committee for the advancement of ESMI, suggesting professional association.	CR210
2.2.1.128	Honors Diploma attributed by students to facilitator, modeled after diplomas they received (see 2.2.1.132), specifying facilitator characteristics.	CR211
2.2.1.129	Message from student to facilitator on his departure from the field, expressing regret not to have been able to be at farewell party because of problems that remained unresolved at moment message was written (MM-format).	CR212
2.2.1.130	Message from 2 RA's to facilitator (+ lead researcher) on his departure from the field, given at airport, together with their report, expressing confidence that departure will not be forever, and that good teachings remain.	CR213
2.2.1.131	MM-71-psl: Interpretative feedback, accompanying criterion-referenced FB Report II, assessing significance of student's participation in course, for him/herself and for course environment.	CR215
2.2.1.132	MM-100: Diploma/certificate issued to students on occasion of graduation ceremony.	CR216

2.2.2 Course related written documentation pertaining to the area of instructional intervention (besides Dick & Carey [1978, 1985] book):

Data Base Item:	Description:	Section:
2.2.2.001	Activities Manual	CR011
2.2.2.002	Exercise in classifying learning outcomes	CR023
2.2.2.003	Exercise in reformulating instructional goals	CR024
2.2.2.004	Handout on "Five types of learning"	CR025
2.2.2.005	OHP transparencies used in open session of 89-05-18	CR044
2.2.2.006	Handout on capability verbs	CR051
2.2.2.007	Exercises in identifying learning domains, and carrying out instructional analysis	CR057
2.2.2.008	OHP transparencies used in open session of 89-05-29	CR063
2.2.2.009	Exercise in identifying learning domains, writing operational objectives, and test items	CR075
2.2.2.010	Handout given to students visiting Schoolbook Publishing House	CR080
2.2.2.011	Instructional text about "Basic principles for learning" (Gagné, 1980)	CR081
2.2.2.012	Transparencies open session 89-06-08	CR083
2.2.2.013	Sample material from report ESMI-1	CR084

Course related written documentation pertaining to the area of instructional intervention (continued):

Data Base Item:	Description:	Section:
2.2.2.014	Discussion guide to analyze progress and difficulties in preparing Report I + synthesis of answers given	CR100
2.2.2.015	Handout on information processing theory	CR108
2.2.2.016	Handout on the relation between internal processes and instructional events	CR109
2.2.2.017	Transparencies open session 89-06-22	CR115
2.2.2.018	Discussion guide to analyze the area of motivation in instruction + responses	CR116
2.2.2.019	Discussion guide to analyze application of information processing principles in projects under execution	CR119
2.2.2.020	Worksheet on motivational strategies used in ESMI course/workshop + individual responses and syntheses class reports of discussion	CR129
2.2.2.021	Handout on ARCS model	CR135
2.2.2.022	Worksheet on motivational characteristics of instructional printware + student responses	CR148
2.2.2.023	Discussion guide about definition of instructional strategy	CR152
2.2.2.024	Handout of instructional analysis carried out jointly by students in previous class session	CR155

Course related written documentation pertaining to the area of instructional intervention (continued):

Data Base Item:	Description:	Section:
2.2.2.025	Application exercise to evaluate instructional and motivational effectiveness of 9 media used in ESMI course/ workshop + responses and synthesis of responses	CR161
2.2.2.026	Discussion guide for small group discussion + questions for plenary discussion + composition discussion groups 1st meeting on implementation of ESMI methodology	CR180
2.2.2.027	Discussion guide second meeting on ESMI implementation	CR207

2.2.3 Course related written documentation pertaining to the area of course planning:

Data Base Item:	Description:	Section:
2.2.3.001	Program of ESMI course/workshop	CR006
2.2.3.002	Planning notes for Session 0	CR007
2.2.3.003	Planning notes for Session 1a	CR022
2.2.3.004	Planning notes for Session 2a	CR039
2.2.3.005	Planning notes for Session 2b	CR047
2.2.3.006	Planning notes for Session 5a	CR090
2.2.3.007	Planning notes for Session 5b	CR099
2.2.3.008	Planning notes for Session 8b	CR133
2.2.3.009	Planning notes for Session 9a	CR141
2.2.3.010	Planning notes for Session 9b	CR147
2.2.3.011	Homework for Session 10b	CR156

2.2.4 Course related written documentation pertaining to the area of course administration:

Data Base Item:	Description:	Section:
2.2.4.001	Sign-up sheet for receipt of initial package of workshop materials	CR003
2.2.4.002	Complete collection of sign-up sheets for different types of class sessions (regular, open, supplementary, ESMI implementation)	CR004
2.2.4.003	Questionnaire + responses about where students can be reached during the day and at night	CR013
2.2.4.004	List of (candidate) participants as per 89/05/07	CR021
2.2.4.005	List of (candidate) participants as per 89/06/05	CR077
2.2.4.006	Overview of test results (3 tests)	CR078
2.2.4.007	Composition of groups	CR089
2.2.4.008	Reconstitution of groups	CR134
2.2.4.009	Reconstitution of groups	CR142
2.2.4.010	Overview of participation in regular and open class sessions up to and including session 10a	CR159
2.2.4.011	Overview of final results obtained by students + detail about contributing components	CR217
2.2.4.012	Overview of participation in different types of sessions by different categories of students + final outcome + comparison for ESMI-1 case	CR218

2.2.5 Course related written documentation pertaining to the area of student assessment:

Data Base Item:	Description:	Section:
2.2.5.001	Test I + answer sheet (key to answers same as equivalent test ESMI-1)	CR034
2.2.5.002	Student responses to Test I + their evaluation	CR035
2.2.5.003	Evaluation results of Test I	CR037
2.2.5.004	Test II + answer sheet + key to answers	CR046
2.2.5.005	Student responses to Test II + their evaluation	CR048
2.2.5.006	Evaluation results of Test II	CR054
2.2.5.007	Test III + answer sheet + key to answers + formative evaluation notes	CR064
2.2.5.008	Student responses to Test II + their evaluation	CR067
2.2.5.009	Evaluation results of Test III	CR068
2.2.5.010	Peer assessment of student participation: assessment questionnaire + responses and overview of results	CR166

2.2.6 Course related written documentation pertaining to the area of student projects:

Data Base Item:	Description:	Section:
2.2.6.001	ESMI-project proposals (25 regular proposals and 1 alternative one)	CR041
2.2.6.002	List of topics of projects being carried out	CR091
2.2.6.003	Complete set of first part of reports about ESMI Projects + evaluation results, dates when handed in, and dates of feedback	CR102
2.2.6.004	Complete set of second part of reports on ESMI Projects + evaluation results, dates when handed in, dates of feedback	CR214

2.2.7 Course related written documentation pertaining to the area of the application of questionnaires, interviews, and evaluative discussions:

Data Base Item:	Description:	Section:
2.2.7.001	Student personal information questionnaire (model + completed questionnaires)	CR012
2.2.7.002	Pre-instructional motivational status questionnaire (ESMI.10.A) + responses	CR014
2.2.7.003	2nd motivational status questionnaire (ESMI.10.B) + responses	CR032
2.2.7.004	3rd motivational status questionnaire (ESMI.10.C) + responses	CR045
2.2.7.005	4th motivational status questionnaire (ESMI.10.D) + responses	CR069
2.2.7.006	Questionnaire about availability for visit to Schoolbook Publishing House + responses	CR070
2.2.7.007	5th motivational status questionnaire (ESMI.10.E) + responses	CR092
2.2.7.008	Questionnaire evaluating visit to Schoolbook Publishing House + responses	CR093
2.2.7.009	Motivational status questionnaire + response special student not participating in classes	CR094
2.2.7.010	6th motivational status questionnaire (ESMI.10.F) + responses	CR110
2.2.7.011	7th motivational status questionnaire (ESMI.10.G) + responses	CR136

Course related written documentation pertaining to the area of the application of questionnaires, interviews, and evaluative discussions (continued):

Data Base Item:	Description:	Section:
2.2.7.012	Motivational status questionnaire + response student who had had great difficulty attending most classes	CR143
2.2.7.013	8th motivational status questionnaire (ESMI.10.H), retrospective w.r.t. course as a whole + responses	CR149
2.2.7.014	Questionnaire on evaluation of instructional strategy used in ESMI course/workshop + student responses	CR153
2.2.7.015	Questionnaire to assess students' perception of course content learned + responses	CR162
2.2.7.016	Documents distributed in Session 10b as input to evaluative end-of-course discussion, including: overview of participation and results obtained as per Session 10a; attributed importance to different instructional strategy components, based on 2.2.2.020; overview of identified motivational and demotivational factors, based on 2.2.7.013.	CR163
2.2.7.017	Structured post-instructional interview for student debriefing; first and second (improved) version + students' agreement with procedures + notes of student responses (see also under audio recordings).	CR219

2.2.8 Course related written documentation pertaining to the area of correspondence concerning the course/workshop:

Data Base Item:	Description:	Section:
2.2.8.001	Letter to director Entity S concerning three students who had left the course, asking for instructional materials to be returned and requesting opportunity to discuss the matter.	CR105

2.2.9 Course related written documentation pertaining to the area of general documents:

Data Base Item:	Description:	Section:
2.2.9.001	ESMI memo form	CR001
2.2.9.002	ESMI letterhead paper	CR002
2.2.9.003	MM-form	CR097
2.2.9.004	MM-form for students departing by air	CR124
2.2.9.005	MM-form for students returning by air	CR125

3. CIRCUMSTANTIAL DOCUMENTATION

3.1 The ESMI-1 case

Due to the more development oriented outlook - and therefore less specifically research oriented perspective - while the ESMI-1 workshop was conducted in 1986, no systematic collection of circumstantial documentation was undertaken at that time. However, existing circumstances surrounding the implementation of that course have been described, largely in a non-referenced way, in Visser & Keller (1989).

3.2 Circumstantial documentation regarding the ESMI-2 case

While research on the second case, the ESMI-2 workshop, was going on, i.e. during a period preceding the implementation of the workshop, as well as while the course was being conducted, and during two months after the last regular class session had taken place, evidence has been collected that would allow to get a better insight into both the immediate and the broader societal circumstances surrounding the research setting. The following categories of documents can be identified within that portion of the data base:

- 1) Newspaper and magazine articles about events taking place at the time of the workshop that would affect the participants' awareness of their situation.
- 2) Books, and other more extensive publications, reflecting on the above events as part of a less ephemeral issue.
- 3) Reports written by consultants working independently from the researcher.
- 4) The researcher's own reporting to the national directorate supervising his consultancy, as well as earlier reporting with relevance to the area of research interest concerned.
- 5) Documents of an incidental nature, usually revealing some kind of relevant aspect regarding single subjects or a particular organizational entity.

A collection of documents like the one referred to above is necessarily incomplete, particularly as regards the choice of documents pertaining to the categories 1 and 2 above. The researcher's criterion in choosing these documents has been their relevance as regards what was foremost on people's minds, as revealed by what they were discussing in their day-to-day work or study environment. The researcher's own observations as well as those reported to him by his research assistants have guided this process. Occurrence of different topics, as well as the frequency with which they appear in this portion of the data base, may be assumed therefore to reflect participants' concerns as far as published materials

go. There were certainly also concerns that got less or no attention in the press, which remain undocumented.

On the following pages a detailed description will be given of this portion of the data base.

3.2.1 Circumstantial documentation in the form of newspaper and magazine articles:

Data Base Item:	Description:	Section:
3.2.1.001	Newspaper article about student unrest at the university ("Student representatives received by Party and Government: Notícias, 89-05-10)	CD001
3.2.1.002	Newspaper article about confrontation between army and armed bandits ("16 Armed Bandits killed by Armed Forces" during attack in Moamba district, province of Maputo: Notícias, 89-05-10)	CD002
3.2.1.003	Newspaper article about student unrest at the university ("Students clarify their positions": Notícias, 89-05-17)	CD003
3.2.1.004	Letter to the editor of newspaper about quality of patient attendance at hospital ("Who pays for the life of our relatives": Notícias, 89-05-19)	CD004
3.2.1.005	Newspaper article about student unrest at the university ("Students welcome improvements taken place": Notícias, 89-05-22)	CD005
3.2.1.006	Newspaper article about attack by armed bandits ("54 people murdered in Massinga", Inhambane province: Notícias, 89-05-27)	CD006
3.2.1.007	Newspaper article about famine in Manica province ("Two hundred seventy thousand people in need of relief": Notícias, 89-05-29)	CD007

Circumstantial documentation in the form of newspaper and magazine articles (continued):

Data Base Item:	Description:	Section:
3.2.1.008	Three items on one newspaper page at the same time celebrating the rights of children and reporting sanctioned and unsanctioned infringements on these rights ("Today begins Children's Week"; "Minor sentenced to two year jail term"; "Lifeless baby found in trash": Notícias, 89-05-29)	CD008
3.2.1.009	Magazine article on children's rights and what it means in reality in the current Mozambican context ("The drama of children and the 1st of June celebrations": Tempo, 89-06-04)	CD009
3.2.1.010	Magazine article about armed bandits' attacks in Marracuene, at 20 miles from the city of Maputo ("Marracuene: Life doesn't go well": Tempo, 89-06-04)	CD010
3.2.1.011	Newspaper article on poor situation in the country's schools ("Hundreds of students study sitting on the ground... and vandals destroy the little that remains in the schools": Notícias, date not recorded, presumably 89-06-05)	CD011
3.2.1.012	Newspaper article about the emergency situation in Zambezia province and irregularities in the food distribution ("How many dead daily in Zambezia province?": Notícias, 89-06-10)	CD013
3.2.1.013	Newspaper article on the opening in the province of Sofala of a department of Entity T - one student of the course will be involved (Minister announces opening in Beira: Notícias, 89-06-13)	CD014

Circumstantial documentation in the form of newspaper and magazine articles (continued):

Data Base Item:	Description:	Section:
3.2.1.014	Newspaper article on emergency situation and irregularities in distribution of donations to the population in need ("Number of victims rises to 5 million: Donations on their way to those who should receive them": Notícias, 89-06-20)	CD015
3.2.1.015	Newspaper article on peace initiative in Angola ("Government and UNITA reach agreement": Notícias, 89-06-23)	CD016
3.2.1.016	Newspaper article on involvement administrators emergency department in irregularities ("Detention in Maputo of DPCCN administrators: Notícias, 89-06-23)	CD017
3.2.1.017	Newspaper article on training of top-level administrators of ministry in which course was taking place, involving two of its students ("Directive personnel being trained in Maputo": Notícias, 89-06-23)	CD018
3.2.1.018	Newspaper articles on peace process in Angola ("Savimbi undertakes before Africa and the World"; "Gbadolite Treaty is a victory of the Angolan people": Notícias, 89-06-24)	CD019
3.2.1.019	Newspaper article on presidential speech indicating readiness for peace talks ("In Mozambique as well: There is no reason that the war should continue": Notícias, 89-06-26)	CD020

Circumstantial documentation in the form of newspaper and magazine articles (continued):

Data Base Item:	Description:	Section:
3.2.1.020	Newspaper article on relations between Mozambique and South Africa ("Renewed interest in RSA about Mozambique": Notícias, 89-06-26)	CD021
3.2.1.021	Magazine article on armed banditry ("Before and after Nkomati: Banditry in Mozambique still carries the same label": Tempo: 89-06-25)	CD022
3.2.1.022	Announcement in newspaper of death of former vice-minister of ministry in which course was taking place [the former vice-minister in question, who committed suicide, had been in office until appr. half a year before] (Notícias, 89-07-01)	CD023
3.2.1.023	Newspaper article about announcement of Mozambican peace initiatives ("President Chissano announces initiatives to bring the war to an end": Notícias, 89-07-18) + various related articles	CD024
3.2.1.024	Magazine article on peace initiatives for Mozambique ("Chissano says stop": The Economist, 89-06-17)	CD025
3.2.1.025	Magazine interview with minister ("Adapting education to the new reality": Tempo, 89-07-16)	CD026
3.2.1.026	Two newspaper articles about massacre in Gaza province ("Armed Bandits massacre eighty two people": Notícias, 89-07-20; "Massacre in Tchanwane: Number of deadly victims rises": Notícias, 89-07-21)	CD027

Circumstantial documentation in the form of newspaper and magazine articles (continued):

Data Base Item:	Description:	Section:
3.2.1.027	Magazine article about Mozambican peace process ("Peace endeavors: Principles announced for the dialogue that should lead to ending violence": Tempo, 89-07-23)	CD029
3.2.1.028	Magazine article about the Mozambican peace process ("Mozambique: RENAMO congress bids for peace": Africa Confidential, 89-07-07)	CD030
3.2.1.029	Set of newspapers and magazines reporting on the Fifth FRELIMO Party Congress (Notícias 89-07-25, 89-07-26, 89-07-27, 89-07-28, 89-07-29, 89-07-31, 89-08-01, 89-08-02, 89-08-03; Tempo 89-07-30, 89-08-06)	CD050
3.2.1.030	Newspaper account by Portuguese citizen held captive by Armed Bandits ("Savagery of the bandits as told by a survivor": Notícias, 89-08-05)	CD031
3.2.1.031	Newspaper article about peace process ("Religious leaders meet with Armed Bandits": Notícias, 89-08-07)	CD032
3.2.1.032	Newspaper article about educational action regarding children in difficult circumstances ("In difficult situation: Care for children brings teachers together in Gaza": Notícias, 89-08-07) + small item on Armed Bandit attack in Nampula against hospital	CD033

Circumstantial documentation in the form of newspaper and magazine articles (continued):

Data Base Item:	Description:	Section:
3.2.1.033	Five articles on Armed Banditry ("Youths denounce ongoing South African support", "Fifteen bandits killed in Gaza", "South Africa continues to train bandits", "Supply of electrical energy can be normalized today": Notícias, 89-08-08; "In a small village in Xai-Xai, bandits murder 54 defenseless citizens": Notícias, 89-08-09)	CD034
3.2.1.034	News flash in newspaper about attack on base of armed bandits ("Largest base of armed bandits destroyed": Notícias, 89-08-11)	CD036
3.2.1.035	Two newspaper articles related to the recent developments ("Government and UNITA reach progress in negotiations", "PRM gets press attention in London": Notícias, 89-08-14)	CD037
3.2.1.036	Newspaper item on peace initiative ("President Chissano received religious leaders": Notícias, 89-08-16)	CD038
3.2.1.037	Newspaper item about army action against Armed Bandits ("Armed Forces liberate Tambara district": Notícias, 89-08-16)	CD039
3.2.1.038	Newspaper article related to fundamental changes in educational policy ("Involvement of agents of society in educational tasks necessary": Notícias, 89-08-16)	CD040

Circumstantial documentation in the form of newspaper and magazine articles (continued):

Data Base Item:	Description:	Section:
3.2.1.039	Newspaper article on effects of armed banditry on education ("Due to criminal action of armed bandits more than two hundred schools closed in Maputo": Notícias, 89-08-18)	CD041
3.2.1.040	Newspaper article on regional involvement in Mozambican peace initiative ("Southern Africa debated in Harare": Notícias, 89-08-21)	CD042
3.2.1.041	Newspaper article on nature of armed banditry ("The short memory of destabilization in Mozambique": Notícias, 89-08-21)	CD043
3.2.1.042	Two newspaper items on bandit action ("Large armed group attacks commercial establishments", "BA's [Armed Bandits] destroy pylons": Notícias, 89-08-24)	CD044
3.2.1.043	Three newspaper items on bandit activity ("FDS [Defense and Security Forces] repel BA attack of Macia", "Armed bandits attack sugar-refining village of Luabo", "Trail of pillage and destruction in Manga": Notícias, 89-08-26)	CD045
3.2.1.044	Magazine article about education, particularly the recent policy changes brought about by the Fifth Party Congress ("Education: A collective challenge": Tempo, no date recorded, presumably 89-09-17)	CD047

3.2.2 Circumstantial documentation in the form of books, brochures, and extensive journalistic publications:

Data Base Item:	Description:	Section:
3.2.2.001	Magaia, L. (1987). <i>Dumba Nengue: Histórias trágicas do banditismo - I.</i> (Dumba Nengue: Tragic stories of banditry - I). Maputo, Mozambique: Cadernos Tempo	CD052
3.2.2.002	Magaia, L. (1989). <i>Duplo massacre em Moçambique: Histórias trágicas do banditismo - II</i> (Twofold massacre in Mozambique: Tragic stories of banditry - II). Maputo, Mozambique: Cadernos Tempo	CD053
3.2.2.003	Two issues of <i>Emergency Mozambique</i> , October 1988 and April 1989, a publication of the National Executive Commission for the Emergency, Maputo, Mozambique	CD054
3.2.2.004	The May 22 and May 29, 1989 issues of the <i>New Yorker</i> with extensive reporting by William Finnigan on the war in Mozambique	CD055

3.2.3 Circumstantial documentation in the form of reports written by consultants other than the researcher:

Data Base Item:	Description:	Section:
3.2.3.001	Consultancy report by a team of the Heloisa Marinho Research Institute (IPHEM), Brazil, in the area of education to children in difficult circumstances, dated Maputo, 1988	CD056
3.2.3.002	Consultancy report by a team of the University of Brasília and the American School of Brasília, evaluating the program for psycho-social rehabilitation of children in emergency situation, dated Maputo, 1988	CD057
3.2.3.003	Consultancy report to the Swedish International Development Authority concerning the area of activity of Entity P, dated April 1989	CD058
3.2.3.004	Internal World Bank consultancy memo regarding the area of responsibility of Entity P, dated December 16, 1988	CD059
3.2.3.005	World Bank aide-memoire, dated February 15, 1989, regarding the area of activity of the ministry under whose responsibility the ESMI course was being carried out, with specific reference also to the interests of Entity P	CD060
3.2.3.006	World Bank Office Memorandum, dated May 3, 1989, regarding area mentioned in 3.2.3.005	CD061
3.2.3.007	UNESCO consultancy report, dated July 19, 1989, with particular incidence in the area of interest of Entity P	CD062

Circumstantial documentation in the form of reports written by consultants other than the researcher (continued):

Data Base Item:	Description:	Section:
3.2.3.008	The <i>Gersony Report</i> on the assessment of Mozambican refugees (Washington, DC: State Department, 1988)	CD063
3.2.3.009	The <i>Minter Report</i> on The Mozambican National Resistance (Renamo) as described by ex-participants (research report submitted to the Ford Foundation and the Swedish International Development Authority, dated 1989)	CD064

3.2.4 Circumstantial documentation in the form of the researcher's own reporting:

Data Base Item:	Description:	Section:
3.2.4.001	Final report concerning twelve years of experience in development cooperation at the Eduardo Mondlane University, Maputo, Mozambique, dated 89-09-30	CD051
3.2.4.002	Consultancy report regarding the area in which ESMI course/workshop took place, dated 89-09-19	CD048
3.2.4.003	Confidential memo to director Entity Q regarding personnel characteristics of Entity P	CD049

3.2.5 Circumstantial documentation in the form of incidental documents:

Data Base Item:	Description:	Section:
3.2.5.001	Exposé by student 05 to the minister about his situation in view of his not having received salary for three years	CD012
3.2.5.002	Two typing attempts by student 08, showing degree of difficulty in coping with requirement that course products should be typed, as well as confusion or disillusionment regarding societal changes taking place	CD028
3.2.5.003	Exposé by former employee of Entity P, and ESMI-1 graduate, including detail about background as to how Entity P had come into existence in a way not involving the people most directly concerned	CD035
3.2.5.004	Draft letter composed by Student 02 requesting granting of privileges related to her status	CD046
3.2.5.005	Set of documents, including minutes of staff meetings, documenting the development of organizational Entity P	CD065
3.2.5.006	Set of documents related to one of the interests of Entity Q, and the particular interest of Student 13, research assistant	CD066

4. PHOTOGRAPHIC DOCUMENTATION

Photographic evidence is added to the data base as a means to provide better insight into the contextual factors surrounding the two cases. As such it should be looked upon as the visual component of the circumstantial evidence referred to in the previous division.

As explained earlier, the ESMI-1 case has not been documented as rigorously as has been the case with the ESMI-2 workshop, due to the difference in balance between development and research interests in the two cases. This is reflected in the numbers of photographs available regarding each of the cases. 49 color photographs document the ESMI-1 case; a total of 193 photographs, 55 in black and white and 138 in color, are available about the ESMI-2 case. Also, the range of interests reflected in the images documenting the ESMI-2 case is wider than those represented in the photographs taken while the ESMI-1 workshop was being conducted.

Photographs related to the ESMI-1 case were taken by the researcher, and some as well by two of his students. In the ESMI-2 case all black and white photographs were taken by photographers of the audio-visual production department of Entity S, while most color photographs were made by the researcher, and occasionally by one of the research assistants and a student.

Below, summary descriptions will be given of the material available in this division of the data base.

4.1 **Photographic documentation related to the ESMI-1 case**

Data Base Items:	Description:	Section:
4.1.1.001 to 4.1.1.008	8 color photographs documenting instructor-driven course proceedings	PD001
4.1.2.001 to 4.1.2.002	2 color photographs of student-driven out-of-class course proceedings	PD001
4.1.3.001 to 4.1.3.007	7 color photographs documenting the post-instructional course evaluation procedures	PD002
4.1.4.001 to 4.1.4.018 and 4.1.4.019 to 4.1.4.032	32 color photographs documenting a variety of workshop related environmental events, particularly in the psycho-social area and that of communication among students and between students and their larger work environment	PD001 and PD002

4.2 Photographic documentation related to the ESMI-2 case

Data Base Items:	Description:	Section:
4.2.1.001 to 4.2.1.024	Instructor-driven course proceedings: 24 black and white photographs documenting the inaugural session, including 2 group photographs	PD003
4.2.1.025 to 4.2.1.042	Instructor-driven course proceedings: 18 color photographs documenting the visit to the Schoolbook Publishing House	PD006
4.2.1.043 to 4.2.1.049	Instructor-driven course proceedings: 7 black and white photographs documenting the visit to the Schoolbook Publishing house	PD004
4.2.1.050 to 4.2.1.060	Instructor-driven course proceedings: 11 color photographs of regular classroom procedures	PD006 and PD007
4.2.2.001 to 4.2.2.005	Student-driven course proceedings: 5 color photographs documenting various out-of-class activities	PD006 and PD007
4.2.3.001 to 4.2.3.002	2 color photographs documenting the supplementary sessions conducted after the formal closure of the course	PD008
4.2.4.001 to 4.2.4.024	24 black and white photographs documenting the post-instructional course evaluation procedures, including 2 group photographs and 1 photograph of a student with the instructor	PD005

Photographic documentation related to the ESMI-2 case (continued)

Data Base Items:	Description:	Section:
4.2.5.001 to 4.2.5.010	10 color photographs documenting the combined graduation ceremony for completing students of the ESMI-1 and ESMI-2 workshops	PD009
4.2.6.001 to 4.2.6.004	4 color photographs taken to preserve information written on the marker board or to document outside reactions to the course	PD007 and PD008
4.2.7.001-003 4.2.7.006-008 4.2.7.036	7 color photographs documenting the physical environment at Entity P and the way it changed	PD006 PD007 PD008
4.2.7.004-005 4.2.7.009-035 4.2.7.038-059 4.2.7.060-066 4.2.7.067-080	72 color photographs documenting various aspects of the psycho-social environment related to the ESMI-2 workshop, showing events differentially brought about by the course procedures	PD006 PD007 PD008 PD009 PD010
4.2.7.037 4.2.7.081 4.2.7.082	3 color photographs documenting course-related communicational aspects of the environment	PD008 PD010 PD010
4.2.8.001 to 4.2.8.002	2 color photographs documenting the weekly research debriefings held in the office of one of the research assistants	PD006
4.2.9.001 to 4.2.9.004	4 color photographs documenting aspects related to course preparation and follow-up activities by the instructor	PD009

5. RESEARCHER AND RESEARCH ASSISTANTS' FIELD NOTES

5.1 The ESMI-1 case

Research regarding the ESMI-1 case was conducted exclusively by the lead researcher, who concurrently was the instructor of the course. The more development oriented approach chosen for that case, and certainly also a lesser degree of preparedness of the researcher at that time as regards the techniques of qualitative research, has resulted in a less systematic and a less specific concern with keeping a field journal. Though notes were taken, the process lacked organization and was not driven by previously specified research concerns. The ESMI-1 data base is therefore deficient in this respect, whence the conclusions drawn in the study of this case (Visser & Keller, 1989) should be conceived as based on a less rich variety of data than it has been possible to collect for the present ESMI-2 case.

5.2. The ESMI-2 field notes

This fifth division of the ESMI-2 data base is constituted of the following parts:

- 1) The *field diary* kept by the researcher (Section FN001: Data Base Items 5.2.1.001 to 5.2.1.261). Most of the information available in this part of the data base has been entered on diskette. The last part of it, however, is only available in the form of handwritten notes, due to hardware failure and lack of availability of technical assistance while working in the field.

This information is identified by diary entry numbers, ranging from 001 to 261, as well as by date. The last three digits of the data base items referring to the researcher's field diary correspond with the number of the diary entry. (Ex.: Data Base Item 5.2.1.078 should be interpreted as entry 078 in the researcher's field diary.)

The field diary covers the period from 89-03-20 to 89-09-25, i.e. the effort of gaining entry into the field, the actual intervention, and the - too hasty - departure from the field. Despite the fact that the intervention had a planning that was clearly delineated by a starting and a final date, there is no clear distinction between each of the three phases mentioned above.

- 2) A few pages of *consultancy related notes* made by the researcher in his quality of consultant to Entity P, covering the period from 89-03-20 to 89-04-04 (Section FN002: Data Base Items 5.2.2.001 to

5.2.2.003). The practice of making separate notes as a consultant and as a researcher was soon discontinued as the two interests started to coincide to a large degree, whence the researcher's field diary could serve both purposes.

- 3) *Personal letters* written by the researcher in which reference is made to the research (Section FN003: Data Base Items 5.2.3.001 to 5.2.3.016). The period covered by these letters runs from 89-03-30 to 89-08-18. They may provide some insight into the validity and reliability of the researcher as a research instrument.
- 4) *Notes related to research assistant involvement* in the research (Section FN004: Data Base Items 5.2.4.001 to 5.2.4.019). The first three items of this part of the data base document the training sessions held with the research assistants. Items 5.2.4.004 to 5.2.4.019 document the various research debriefings. In part, i.e. Items 5.2.4.007 to 5.2.4.019, they cover the same content referred to in the audio recorded division of the data base under Item Numbers 1.2.1.001 to 1.2.1.013.
- 5) *The research assistants' independent report* (Section FN005: Data Base Items 5.2.5.001 and 5.2.5.002). The first of these two item numbers refers to a provisional version of the report, which was discussed with the lead researcher on 89-09-23; the second item number refers to the final version of the report, signed by the research assistants. In preparing the report, the research assistants have based themselves on their own notes as well as on the audio

recordings of the research debriefings. Their own deliberations in preparing the report have also been audio recorded (Data Base Item 1.2.2.001).

APPENDIX 8

Gantt chart, showing course activities and deadlines for the ESMI-2 workshop:

- 1) original in Portuguese
- 2) translation in English.

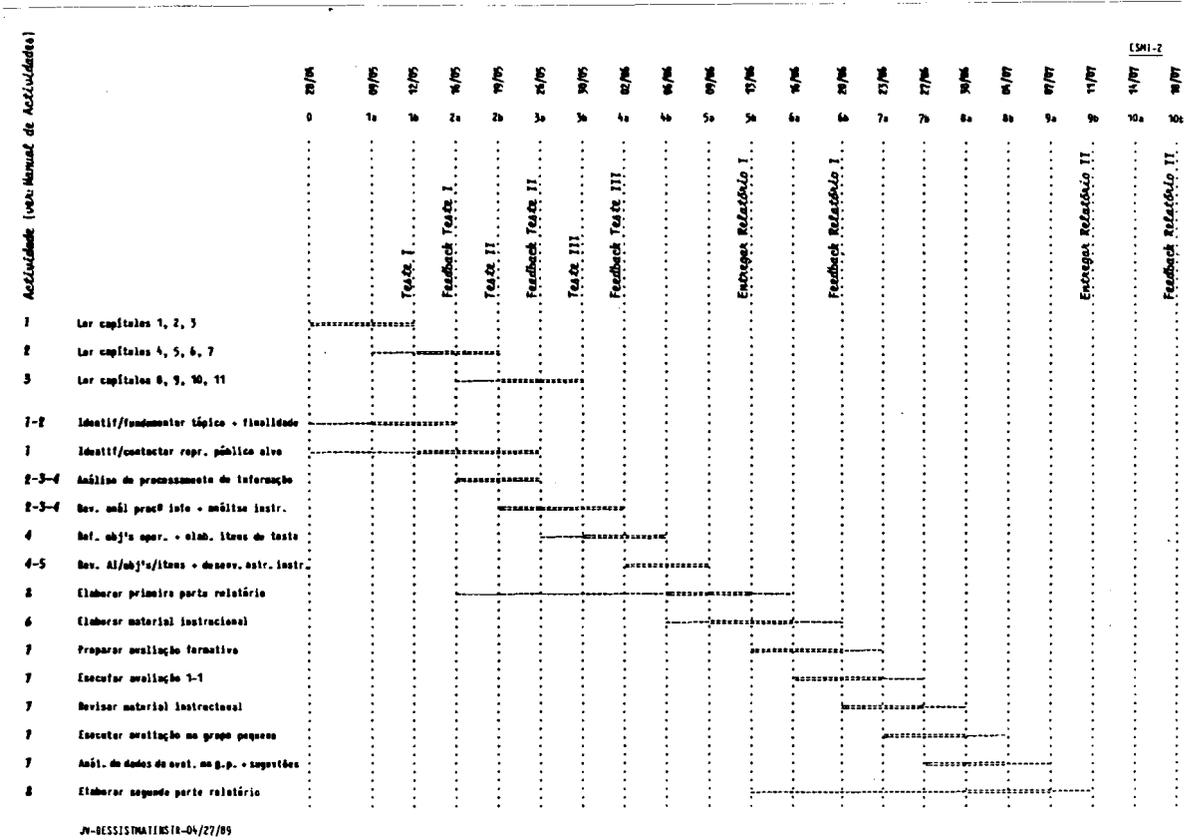
The total duration of the workshop of eleven weeks and a half shown on the Gantt chart is divided into two periods. The first one runs from session 0 to session 3b, and concentrates on the acquisition of the theoretical framework of systematic instructional design. The second period runs from session 4a till the end of the workshop. It emphasizes application of skills in a practical context.

A double dashed line in the Gantt chart indicates a period in which students should, according to the given planning, be actively involved in the course activity in question.

A single dashed line suggests a period in which students may already be working on the activity indicated, or a period in which they could still be completing the particular activity if they had not succeeded finishing it according to schedule.

The Gantt chart itself, particularly as it communicates intermediate goals, is considered to be a motivational message (MM-3; Data Base Item 2.2.1.003).

Original (in Portuguese) of *ESMI-2 Gantt chart*:



Translation of *ESMI-2 Gantt chart*:

Vertically the following listing is presented:

Activity (see: Activities Manual)

1	Read chapters 1, 2, 3
2	Read chapters 4, 5, 6, 7
3	Read chapters 8, 9, 10, 11
1-2	Identify/justify [choice of] topic + instructional goal
1	Identify/contact representatives of target audience
2-3-4	Information processing analysis
2-3-4	Revision info proc. anal. + instructional analysis
4	Define performance objectives + develop test items
4-5	Revise IA/obj's/items + develop instructional strategy
8	Draft first part of report
6	Develop instructional material
7	Prepare formative evaluation
7	Conduct one-to-one evaluation
7	Revise instructional material
7	Conduct small group evaluation
7	Analysis of small group evaluation data + suggestions
8	Draft second part of report

Horizontally the dates and numbers of the various work sessions are mentioned, with in some cases the following additional information:

<i>For Session 1b:</i>	Test I
<i>For Session 2a:</i>	Feedback Test I
<i>For Session 2b:</i>	Test II
<i>For Session 3a:</i>	Feedback Test II
<i>For Session 3b:</i>	Test III
<i>For Session 4a:</i>	Feedback Test III
<i>For Session 5b:</i>	Submit Report I
<i>For Session 6b:</i>	Feedback Report I
<i>For Session 9b:</i>	Submit Report II
<i>For Session 10b:</i>	Feedback Report II

APPENDIX 9

Excerpts of the ESMI-2 motivational communication process.

In this appendix, representative instances of the motivational communication process, conducted in the framework of the ESMI-2 workshop, will be presented. Reproductions of the originals in Portuguese will be presented in conjunction with either complete or summary translations. Where appropriate, explanatory comments will be provided as well. Unless otherwise indicated, the originals used the format shown in Figure 1, using one sheet of A4 size paper folded twice.

Names of institutions and persons have been deleted in the interest of anonymity.

Salvador Boaventura of the Schoolbook Publishing House in Maputo, Mozambique, crafted the four athlete designs shown of pages 382 and 383. The cover design of MM-80 was based on and adapted from a cartoon in Kaufman, R. (1979).

One of the first components of the motivational communication process was the contract signed between participants and facilitator (MM-5, Data Base Item 2.2.1.005). It served as an interactive motivational message. Its A4 size original, shown below in reduction, was presented to the students during the inaugural session.

ESMI-0

**CURSO-OFICINA
EM
ELABORAÇÃO SISTEMICA DE MATERIAL INSTRUCIONAL**

Caro participante,

O curso/oficina que vamos agora iniciar implica, como qualquer outra actividade de formação, aspectos económicos importantes. Trata-se da alocação de recursos escassos numa actividade que visa alcançar determinados objectivos. Esses recursos englobam, entre outros, os materiais impressos que vai receber, a utilização das instalações em que vão decorrer as nossas sessões de trabalho, a utilização de diferentes meios, e o tempo do facilitador, dedicado à preparação, facilitação e acompanhamento da sua aprendizagem. Mas o recurso mais importante, e talvez mais escasso, é o seu tempo, não só a parte que o serviço lhe cede, mas também, e nomeadamente, o investimento pessoal que você deve fazer na aprendizagem.

O documento ESMI-1 explica os objectivos do curso/oficina, bem como o que se deve esperar, tanto do facilitador como dos participantes, no processo de atingi-los. O alcance dos objectivos depende largamente da satisfação, por ambas as partes, das condições especificadas. Visto o grande número de candidatos para a participação no curso/oficina, a não-satisfação dessas condições por parte de um dos participantes constitui uma perda de oportunidade para alguém que não pôde participar. Por isso, a realização dos objectivos do curso/oficina constitui um

COMPROMISSO
entre

<p>O FACILITADOR</p> <p>nome: _____, que se compromete a cumprir o estipulado no documento ESMI-1 no que se refere às funções de facilitador, nomeadamente no respeitante à preparação e orientação durante um período de dez semanas de duas sessões de trabalho por semana, bem como no referente às suas tarefas de acompanhamento fora dessas sessões de trabalho, pela que assina,</p> <p>Maputo, ___ de _____ de _____</p>	<p>O PARTICIPANTE</p> <p>nome: _____, que se compromete a cumprir o estipulado no documento ESMI-1 no que se refere à disposição para a aprendizagem de participante, bem como no respeitante à sua participação activa nas 20 sessões previstas e à realização de tarefas autónomas fora deste tempo durante aproximadamente mais 100 horas, pela que assina,</p> <p>Maputo, ___ de _____ de _____</p>
---	--

JV-063513/MA11NSTR-04/20/89

The translation runs as follows:

Dear participant,

The course/workshop, which we are about to start, involves, just like any other training activity, important economical aspects. Scarce resources are being allocated to an activity which aims at reaching a series of given objectives. These resources encompass, among other things, the printed materials you will receive, the use of the installations in which our work sessions will take place, the use of different media, and the facilitator's time, dedicated to the preparation, facilitation, and guidance of your learning. But the most important, and perhaps scarcest, resource, is your time, not just the part of it which your employing entity makes available to you, but also, and particularly, the personal investment you have to make in your learning.

Document ESMI-1 [a brochure, MM-1. Data Base Item 2.2.1.001] explains the objectives of the course/workshop, as well as what should be expected, both of the facilitator and the participants, in the process of attaining them. Reaching the objectives depends to a large extent on the fulfillment, by both sides, of the conditions specified. In view of the large number of candidates for participation in the course/workshop, not satisfying these conditions by the participants constitutes a loss of opportunity for

someone who could not participate. Therefore, fulfilling the objectives of the course/workshop constitutes a

P L E D G E

between
and

THE FACILITATOR

THE PARTICIPANT

name: _____, who pledges to fulfill the conditions specified in document ESMI-1 with respect to the functions of the facilitator, particularly as regards preparing and conducting, during a ten week period, twice weekly work sessions, as well as regarding his tasks in providing guidance outside these work sessions, for which he signs,

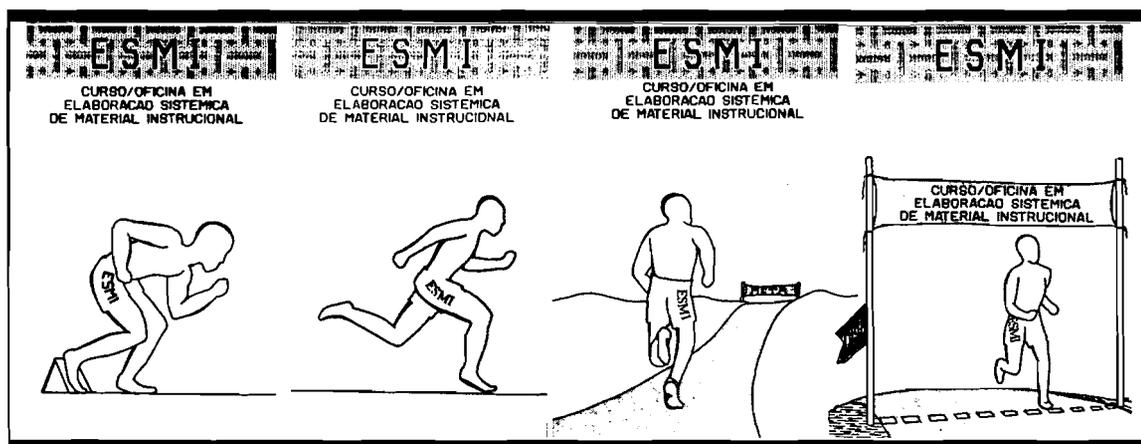
name: _____, who pledges to fulfill the conditions specified in document ESMI-1 with respect to the willingness of the participant to learn, as well as regarding his/her active participation in the 20 planned sessions and performance of autonomous tasks outside that time during approximately 100 hours, for which he/she signs,

Maputo, the ___ day of _____ of _____

Maputo, the ___ day of _____ of _____

Subsequent motivational messages were found to reinforce the initial pledge made, particularly as regards the sense of mutual responsibility expressed in the agreement.

At different moments during the workshop reference was made in the motivational messages to progress attained and/or to the need to persevere. In four messages (Data Base Items 2.2.1.006/040/070/082) this aspect was graphically enhanced, using a cover design showing an athlete at the start of his run, while running, approaching the finish, and reaching the finish. The series of four cover designs is shown below.

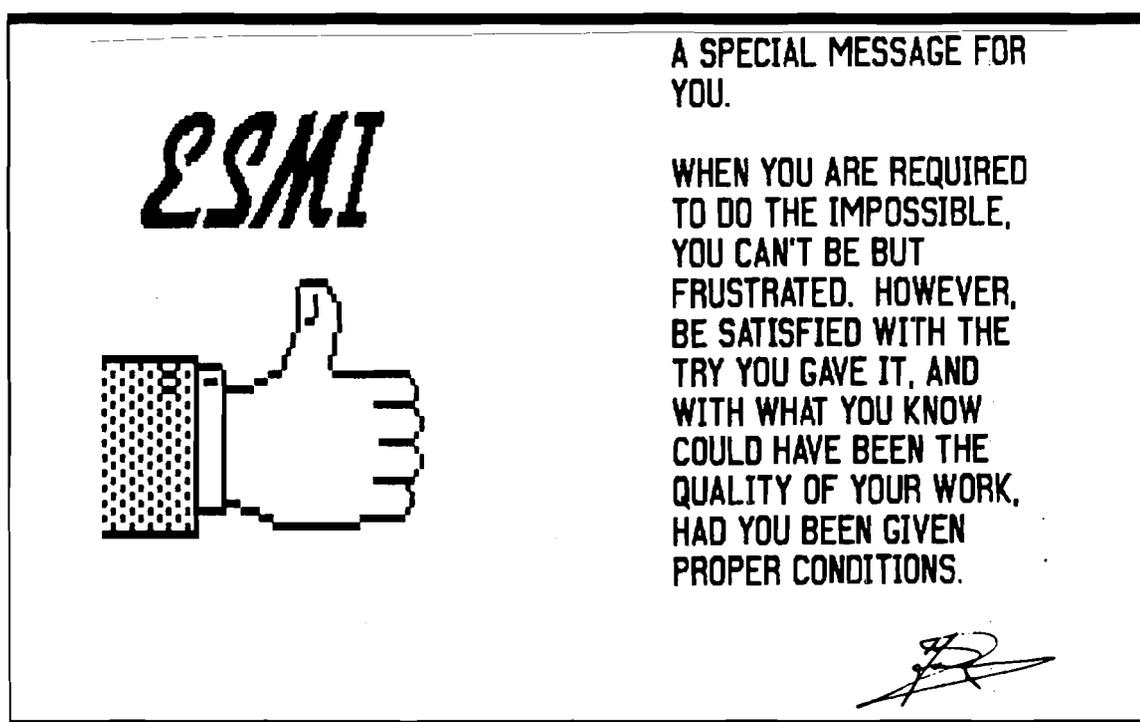


The content of the first of the four messages (MM-6, Data Base Item 2.2.1.006) communicated, among other things, the following:

The way still ahead of us may seem a long one. However, it is marked by important events which will show you when you reach intermediate goals.

were preparing would not be the best in their lives. the methodology they were learning being a process. For those who though they knew everything already, this methodology would not do! It would be necessary to continue after the course was over, and students were asked to be creative about that in preparing themselves for the last regular class session.

The personal message reproduced below (MM-10-psl, Data Base Item 2.2.1.014), requires no translation. It was directed at a student who was fluent in English, and whose participation in the course had been put in jeopardy because of an excessive work load, not related to the course, she had received. "It brought tears in my eyes", the student later reported.



The two messages shown on the next page (MM-13, Data Base Item 2.2.1.017; and MM-15-psl, Data Base Item 2.2.1.019) marked the event of the first test.

The first message was given to the participants immediately after completing the test. The translation of the text on cover and inside is as follows:

Cover: **ESMI** After the first test

Inside: You have just entered a new part of the track.

Maintain the rhythm you acquired while preparing yourself for the first test, which you have just written. In 4 days we'll discuss 4 new chapters. 3 days later we'll have the second test.

Keep going well.

One student, who had seen the message on the facilitator's desk when she came in to ask whether she could write the test at a later moment, as she had not had the opportunity to prepare herself adequately, she thought, decided to write the test, because she wanted to have the message, and produced a commendable piece of work.



The second message had the same cover design for all students, incorporating the words "test 1" and "feedback", but the contents on the inside were personal and handwritten, providing interpretative cues to help the student assess his or her performance against the background of individual characteristics and abilities.

Sometimes, messages were directed at special subgroups of students, having some kind of particular problem not encountered by their colleagues. The two reproductions on the next page are examples.

The first of the two messages (MM-18, Data Base Item 2.2.1.022) was directed at a small group of students who had not submitted in time the written proposal for their individual instructional design project. The cover shows the Gantt chart they had received earlier, which should have guided their planning, an arrow indicating the missed deadline. The content made clear that it was difficult for the facilitator to honor his part of the pledge if the student did not adhere to the planning. It also expressed confidence in the student's ability to solve the problem. The message furthermore communicated that the proposal the student was supposed to submit would not be considered 'final'. The student would always have the right to change it.

The second message (MM-20, Data Base Item 2.2.1.024) went to students who for various reasons had not been able to take the second test. The cover and inside texts read as follows:

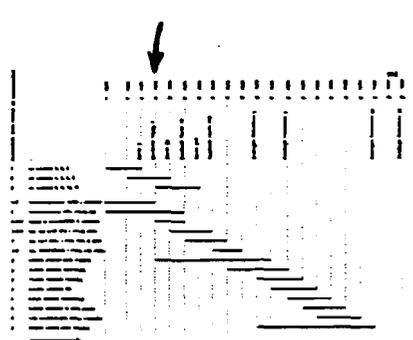
Cover: **ESMI** Now that it is still possible,

Inside: use the opportunity to do the second ESMI test.

That possibility will exist on Monday, May 22, at the following venue [name, address and telephone number indicated].

ESMI

**CURSO/OFICINA EM
ELABORACAO SISTEMICA
DE MATERIAL INSTRUCIONAL**



17/05/89

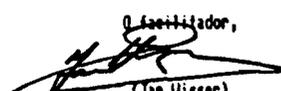
Caro participante,

De acordo com o nosso plano de actividades deveria ter entregue a sua proposta para o seu projecto de elaboracao sistematica de material instrucional ate 16 de Maio.

Embora tenha toda a compreensao pelas dificuldades que se colocam quanto a realizacao das suas tarefas do curso/oficina ESMI em conjuncao com as suas tarefas profissionais normais, a nao entrega da sua proposta dificulta-me cumprir a minha parte do compromisso que juntamente assinamos.

Tenho toda a confianca na sua capacidade de resolver esse problema. A proposta que me vai entregar nao considerarei 'final'. E apenas uma primeira formulacao das suas ideias sobre a instrucao que pretende desenhar. Essa proposta recebera comentarios da minha parte, que lhe vao ajudar, juntamente com outras opinioes - nomeadamente as dos seus colegas e de representantes do seu publico alvo - em reformula-la.

Aguardo portanto com interesse aquilo que voce neste momento deve estar a preparar. A minha resposta sera tao oportuna como a entrega da sua proposta a sera para mim.

O facilitador,

(Jan Visser)

ESMI

**AGORA,
QUE AINDA E
POSSIVEL,**

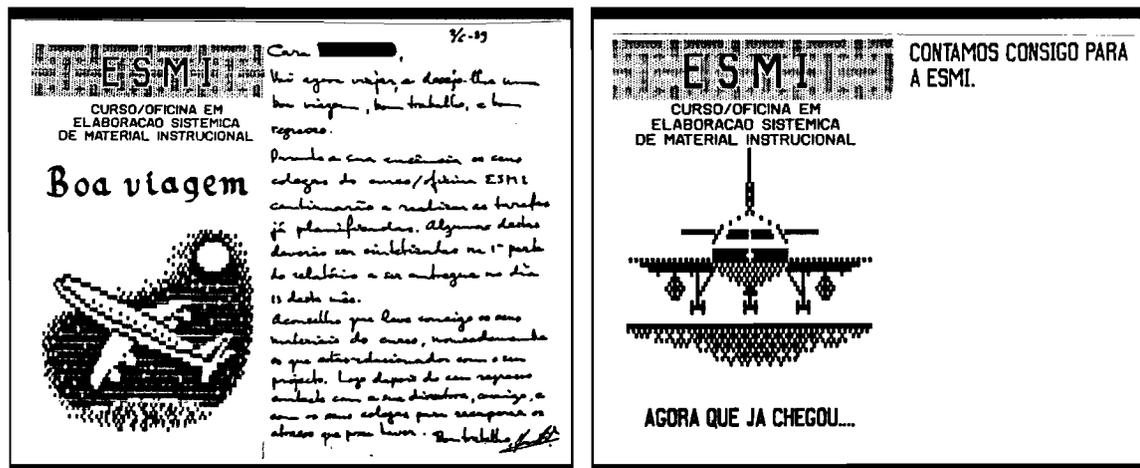
19/05/89

**APROVEITE A
OPORTUNIDADE PARA
REALIZAR O
SEGUNDO TESTE DE ESMI.**

**HAVERA ESSA
POSSIBILIDADE NA
SEGUNDA FEIRA,
DIA 22 DE MAIO,
DAS 09.00 H AS 10.30 H
NAS INSTALACOES DO [REDACTED],
AVENIDA [REDACTED],
[REDACTED].
(TELEFONE: [REDACTED])**


Jan Visser

The course work of many students got interrupted because of work related commitments outside Maputo. The two messages that follow (Data Base Items 2.2.1.038 and 2.2.9.005) are typically related to such events.



Besides wishing the person well on his or her trip, the content would often refer to possibilities the student might find to apply the newly learned concepts in solving problems of the environment where s/he would be traveling. On return, the student might receive the second of the two messages shown, telling him/her:

Cover: Now that you have come back...

Inside: we count on you for ESMI, a message which would normally be followed by personal, handwritten, comments and advice about what the student might do to catch up.

Some messages were prepared on ready-made forms, that could be completed in handwriting. These forms could be used for on-the-spot design in cases where immediate intervention was called for, or to express a level of informality not present in some of the messages the design procedure of which was somewhat more sophisticated. The example shown below (MM-47, Data Base Item 2.2.1.057) was successfully used to improve habits of arriving in time for class, and communicating apologies. The translation runs as follows:

Cover: Your presence motivated your colleagues.

Inside: Analysis of the questionnaires, regularly filled out by you, indicates that one of the motivating factors of the ESMI course/workshop is the conviviality it created among professionals of this area. It is also mentioned that the fact that some do not appear, and the late arrivals we have been witnessing lately, constitute demotivating factors.

Dear colleague, the conclusion is clear. Do everything possible to be with us and to arrive in time. In our regular sessions (on Tuesday and Friday), we start 08.30! The open sessions begin at 14.30 every Thursday. We appreciate your presence.

If for some reason you would be unable to attend a regular class session, or if you foresee that you will be late, please inform the facilitator or one of your colleagues, so that your colleagues will know.

By the way, starting tomorrow, we will be discussing the topic "MOTIVATION".

See you tomorrow.

Like on most messages, the text is followed by a personal signature, and telephone numbers, in case the student would like to make an appointment or consult with the facilitator over the phone.

22-06-89



CURSO/OFICINA EM
ELABORACAO SISTEMICA
DE MATERIAL INSTRUCIONAL

**A sua presença
motiva os seus
colegas**

● A análise dos inquéritos que periodicamente preenchem indica que um dos factores motivadores do curso/oficina ESMI é o convívio entre os profissionais desta área. Constatou-se também que a não comparência de alguns, e os atrasos que ultimamente se estão a verificar, constituem factores de desmotivação.

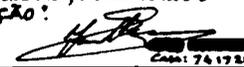
Caros colegas, a conclusão é clara. Faça todo o possível para estar conosco e para chegar na hora. Nas sessões regulares (nas 3^{as} e 6^{as} Feiras) a hora de início é sempre às 08:30h. Nas sessões abertas o início é às 14:30 e às 5^{as} Feiras.

Apreciamos a sua presença.

Se por qualquer eventualidade não poder estar numa das sessões regulares, ou se provar um atraso, faça o favor de informar o facilitador ou um colega, de forma a se poder justificar o caso perante os seus colegas.

Além, a partir de amanhã, discutiremos o assunto "MOTIVAÇÃO".

Até amanhã.


76 1726

Following this message, a significant improvement in punctuality and assiduity could be noticed, not only as regards the regular class sessions, but also with respect to activities of an optional nature.

Some messages were simple reminders of things that were foreseen to be discussed. Mentioning them created expectations, and aroused curiosity, leading students to better prepare themselves for such occasions. The translation of the adjacent example (MM-68, Data Base Item 2.2.1.080) is as follows:

Cover: ESMI The end of the course does not constitute the end of learning. How can we go on learning by doing?



ESTA QUESTAO, ENTRE OUTRAS, SERA DISCUTIDA NA ULTIMA SESSAO DO SEGUNDO CURSO/OFICINA DE ESMI.

NAD FALTE NESSE ENCONTRO IMPORTANTE QUE SE REALIZARA NA PROXIMA TERCA FEIRA, DIA 18 DE JULHO, AS 08.30 HORAS, NO [REDACTED]



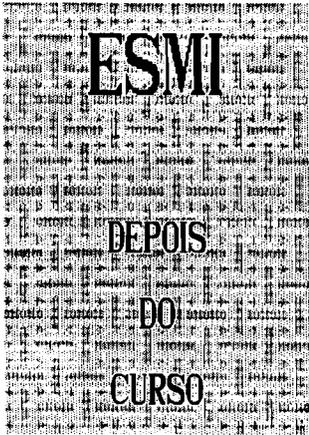
O FIM DO CURSO
NÃO CONSTITUI O FIM
DA APRENDIZAGEM

COMO PODEMOS
CONTINUAR A APRENDER
NA PRÁTICA?

Inside: This question, among others, will be discussed during the last session of the second ESMI course/workshop.

Don't miss this important meeting, which will take place next Tuesday, July 18, at 08.30, at [name of institution deleted].

From time to time, interactive messages would be used as well. A typical example is the one shown below (MM-72, Data Base Item 2.2.1.084), handed out to those students, who, on the occasion of the last regular class session, had not yet completed their course assignments.



18/07/89

Caro participante,

Nao chegou de concluir, ate esta data, todos os trabalhos previstos no ambito do curso/oficina ESMI. Por isso, agora agora encontrar uma planificacao ampliada que lhe permita cumprir o seu compromisso com um minimo de atraso possivel.

Com os conhecimentos adquiridos no curso deve ser capaz de prever quanto tempo ainda lhe leva cumprir os passos que o separam da meta, tomando em conta os seus condicionamentos de trabalho.

O seu problema ja nao e uma questao de falta de conhecimentos de ESMI. A sua participacao nos outros trabalhos do curso/oficina ja lhe deve ter convencido que renha as competencias basicas necessarias. Agora e muito mais uma questao de planificacao e de disciplina e perseveranca que lhe devem conduzir ate ao fim.

Voce pode ainda contar com o meu acompanhamento durante algum tempo, desde que me apresente uma proposta razoavel para completar os seus trabalhos de ESMI. Utilize para esse efeito este mesmo cartao, preenchendo-o com as diferentes datas ate as quais vai cumprir as tarefas indicadas. Para as tarefas que ja completou ponha o sinal no espaco reservado para a data.

Devolva-me o bilhete para eu poder aproveitar a proposta do seu novo compromisso.

O facilitador:



Telefone: (04) [redacted] Casas 74 17 26 (Rua D. Afonso Henriques 183)

Eis os meus novos compromissos.

Completarei os meus trabalhos de ESMI, propondo a seguinte planificacao:

- Primeiro relatorio ate: ___/___/89
- Avaliacao individual ate: ___/___/89
- Avaliacao de pequeno grupo ate: ___/___/89
- Segundo relatorio ate: ___/___/89

Conto para o efeito com o apoio continuado do facilitador.

Magalo, aos ___ de ___ de 1989

(assinatura do participante)

Aprovado: _____

Data: ___/___/89 _____ (o facilitador)

Students were at different degrees of completing their work. A number of them had already handed in all their assignments, others were, for various reasons, normally having to do with interference from tasks performed as part of their regular duties, delaying the fulfillment of their course obligations. Following the text on the cover, which reads: "ESMI After the course", the text on the inside continues as follows:

Dear Participant,

Until today you have not yet been able to complete all the activities foreseen to be carried out in the framework of the **ESMI** course/workshop. It is important, therefore, to find a way of extending your planning in such a way that you can still honor your pledge with as little delay as possible.

With the knowledge you acquired during the course, you should be able to foresee how much time you still need to perform the steps that separate you from the final goal, taking into account the restraints of your work.

Your problem is no longer that of lack of knowledge about **ESMI**. Your participation in other activities of the course/workshop should have convinced you already that you possess the basic skills required. Now it has become much more a matter of planning and of discipline and perseverance that should carry you to the end.

You can still count on my availability to accompany your work for some time, as long as you present me a reasonable proposal to complete your **ESMI** work. For that purpose, you can use this same card, filling out the different dates until when you will complete the tasks mentioned. For the tasks you have already completed, put a in the space provided for the date.

Return the note to me, so that I can approve the proposal of your renewed pledge.

After the student had returned the message with her/his new planning, dated and signed, the facilitator would sign it as well, if he approved. A copy was then made, covering the text translated above, and replacing it by the following, handwritten, words: "I agree with the planning you presented me. I wish you every success with the completion of your work". Alternatively, the facilitator would first discuss possible changes in the planning with the student, before signing and returning the approved proposal.

The procedure described above, as well as some of the examples shown, indicate what is required to implement the motivational messages strategy: a copying machine, and some kind of facility for text and graphic design. Manual design is of course possible, but the addition of a typewriter, and preferably a microcomputer, will greatly enhance the medium. Use of a microcomputer particularly facilitates not only message design, but also storage and retrieval for later use in the same or adapted form of earlier produced messages. It also economizes the designer's time when preparing personalized messages.

The process of motivational communication through "little notes", after it had been applied for some time, led to reciprocity. One student expressed this idea in the message reproduced below (Data Base Item 2.2.1.087), using the format of the messages the facilitator used to distribute.

ESMJ

```

graph TD
    subgraph Cycle
    direction TB
    A[motivação instrução] --> B[RECEPTOR ALUNO]
    B --> C[resposta ao teste]
    C --> D[retro-retroalimentação]
    D --> A
    end
    E[EMISSOR FACILITADOR] --> B
    B --> E
    
```

Jan Vises,

"Uma comunicação unidirecional na realidade não existe. Toda a comunicação verdadeira se realiza nos dois sentidos, ou seja, o receptor torna-se emissor e o emissor receptor, etc. "

Esta ideia, que li quando preparava a minha participação no outro curso "Unesco", talvez explique a tendência que eu tive, ao longo do curso ESMI, de responder aos seus bilhetinhos com outros bilhetinhos.

Com este bilhetinho aqui, agora no fim do curso em que rompemos ainda mais com os formalismos do ambiente em que vivemos, eu queria comunicá-lhe a grande satisfação que foi para

uma poder participar neste curso.

Um MUITO OBRIGADA ao facilitador!

[Redacted]

21/7/89

The cover design shows the following sequential exchanges of information between sender (facilitator) and receiver (student): motivation/instruction; responses to test; feedback; feedback in return (retro-retroalimентация, as the Portuguese language allows you to say, gets the idea clearer across). The message itself reads:

"A one-way communication really does not exist. All real communication takes place in two directions, or, in other words, the receiver becomes sender and the sender receiver, etc".

This idea, which I read when I prepared my participation in the other [name deleted] course, perhaps explains the tendency I had, all along the ESMI course, to respond to your little notes with other little notes.

With this little note, now, at the end of the course, when we break even more with the formalities of the environment in which we live, I should like to communicate to you the great satisfaction it has been for me to participate in this course.

A THANK YOU VERY MUCH to the facilitator. [Signature deleted.]

After the last regular class session, the workshop still went on for a considerable number of students who were still completing their assignments. The motivational messages continued to reach those students. Two examples follow.

"A new pledge", says the text on the cover of the adjacent example (MM-87-psl, Data Base Item 2.2.1.103). The message is directed at a student who had been unable to complete his final assignment in accordance with his proposed planning. On the inside the message continues as follows.

I have accepted the reason you presented me for not fulfilling the planning we previously agreed on. A new agreement with you, till August 23, has already entered into force.

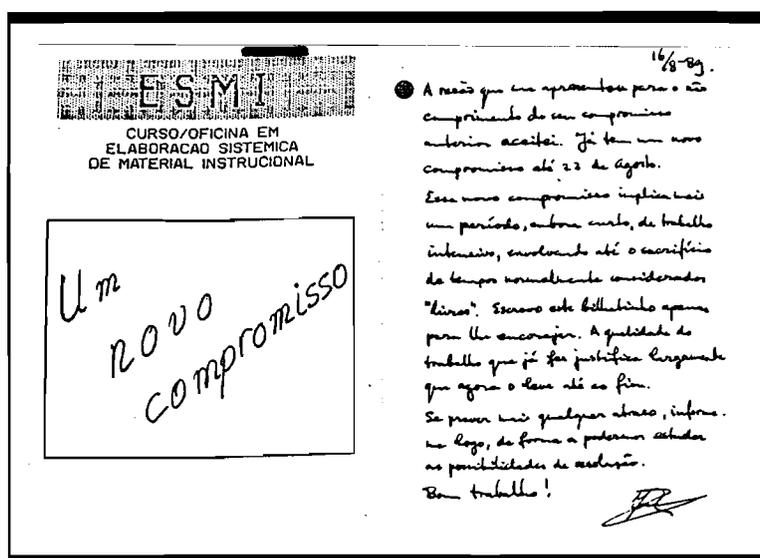
This new agreement implies yet another period, though short, of intensive work, which will even involve sacrificing time which is normally considered "free". I am writing you this little note merely to encourage you. The quality of the work you have already done, largely justifies that you now carry it to its conclusion.

Should you foresee any further delay, inform me at once, so that we can see what possibilities there are to solve the problem.

Success with the work!

The student later told that this message got him back on track, after he had almost given up!

Two special students had encountered particularly great problems in complying with the course planning. As special students they were under no specific obligation to do so, but they had themselves decided that, despite the work load they were already facing, they would complete all assignments. They continued the struggle until almost two months after the last class session had taken place, continuing to receive support through the



"little notes". To encourage them not to give up, while, shortly before the researcher would leave the field, they still had a sizable portion of work to complete, the message reproduced below was distributed to them. Both of them reported later to have been working until the early morning hours to get the work done. One of the students in question handed in her final work with a message in return to the facilitator, thanking him for his "support, insistence, and 'blackmail', as a result of which I can now claim to be a true ESMian!" (Data Base Item 2.2.1.118). The other student kept mentioning the "little notes" as something the effectiveness of which had surprised him.

The message translates as follows:

Cover: I'm impressed

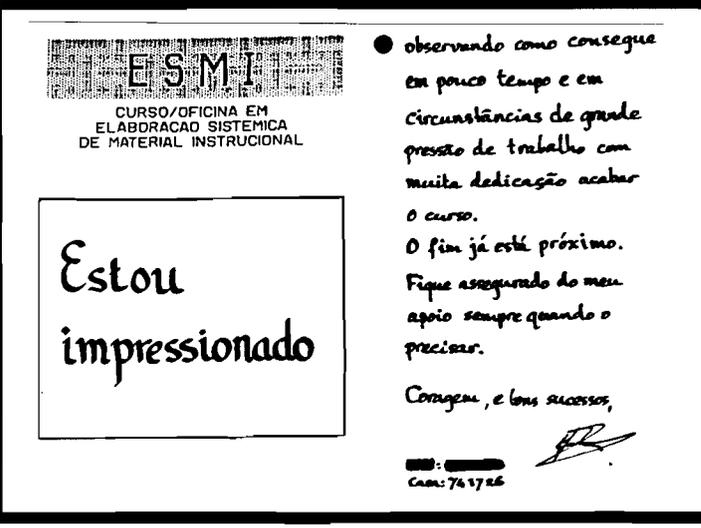
Inside: seeing how you succeed, in little time, and under circumstances of great pressure, with much dedication to complete the course.

The end is already near.

Remain assured of my support whenever you need it.

Keep courage. Wish you lots of success.

Another strong interest that continued to exist after the last class session was over, was to see acquired knowledge implemented in daily practice. While a number of people were still working on the assignments that others had already completed, meetings were organized in which progress and problems could be discussed regarding the way the ESMI methodology could shape or restructure the practice of designing instructional materials. People who had participated in the ESMI learning experience, first only those of the ESMI-2 workshop, afterwards also the former ESMI-1 graduates, were successfully encouraged to attend such meetings, using post-instructional motivational messages of the type shown in the adjacent box (MM-80, Data Base Item 2.2.1.095). Meetings were held at times that had previously served the purpose of conducting class sessions.



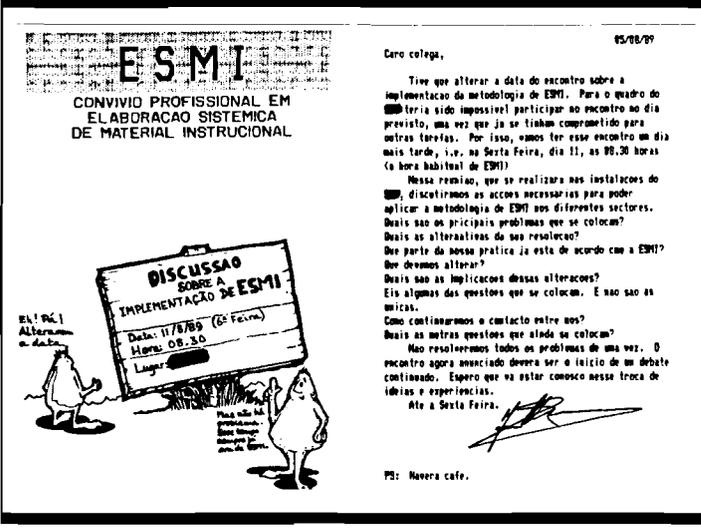
ESMI
CURSO/OFICINA EM
ELABORACAO SISTEMICA
DE MATERIAL INSTRUCIONAL

**Estou
impressionado**

● observando como consegue em pouco tempo e em circunstâncias de grande pressão de trabalho com muita dedicação acabar o curso. O fim já está próximo. Fique assegurado do meu apoio sempre quando o precisar.

Coragem, e bons sucessos,

Cam: 74 1726



ESMI
CONVIVIO PROFISSIONAL EM
ELABORACAO SISTEMICA
DE MATERIAL INSTRUCIONAL

05/08/89

Caro colega,

Tive que alterar a data do encontro sobre a implementação da metodologia de ESMI. Para o quadro do teria sido impossível participar no encontro no dia previsto, uma vez que já se tinham comprometido para outras tarefas. Por isso, vamos ter esse encontro um dia mais tarde, i.e., na Sexta Feira, dia 11, as 08.30 horas (a hora habitual de ESMI).

Nessa reunião, que se realizara nas instalações do, discutiremos as ações necessárias para poder aplicar a metodologia de ESMI aos diferentes sectores.

Deixei-lhe os principais problemas que se colocam? Deixei as alternativas de sua resolução? De que parte da nossa prática já está de acordo com a ESMI? Que devemos alterar? Deixei-lhe as implicações dessas alterações? Eis algumas das questões que se colocam. E não são as únicas.

Como continuaremos o contacto entre nós? Deixei-lhe as outras questões que ainda se colocam? Não resolveremos todos os problemas de uma vez. O encontro agora anunciado deverá ser o início de um debate continuado. Espero que vá estar conosco nessa troca de ideias e experiências.

Até a Sexta Feira.

PS: Haverá café.

ELIAC |
Alto...
a data

DISCUSSAO
SOBRE A
IMPLEMENTACAO DE ESMI
Data: 11/8/89 (Sexta Feira)
Hora: 08.30
Lugar: ...

The cover design shows the announcement of a change of date of the first of these sessions, having the two figures comment:

- "Oh, boy! They changed the date."
- "But that doesn't matter. That was always ESMI time already."

The text on the inside detailed the same information, specifying also the questions to be discussed:

In this meeting...we shall discuss the actions required to be able to apply the ESMI methodology in the different sectors.

What are the fundamental problems at stake?

What the alternatives to solve them?

What part of our practice is already in agreement with ESMI?

What do we have to change?

What are the implications of such changes?

These are just some of the questions that should be asked. And they are not the only ones.

How do we continue the contact among us?

What are the other questions that should be asked?

We shall not solve all problems at once. The meeting just announced should be the beginning of a continued debate. I hope you will be with us in this exchange of ideas and experiences.

See you on Friday.

PS: Coffee will be served.

The next example (MM-98, Data Base Item 2.2.1.124) was one of the last messages produced, following the ESMI-2 workshop. The cover design is a collage of various previous cover designs, featuring the words: "How are we going to continue?"



18/09/89

- Quem facilitara o ESMI sem facilitador?
- Como continuaremos a aprendizagem iniciada?
- De que forma vamos implementar o aprendido?
- Como podemos organizar o nosso trabalho para garantir uma implementacao eficaz dos varios aspectos de ESMI nos diferentes sectores que participaram nos cursos.
- Qual a experiencia ja existente que possa servir de base para o futuro desenvolvimento?

Essas questoes, e outras, poderao ser discutidas durante o encontro marcado para Quarta Feira, dia 20 de Setembro, as 14.30 horas no [redacted].

O ESMI e um meio, nao e um fim! Portanto, antes de responder ao tipo de questoes atras formulado sera necessario ter-se uma visao clara de quais sao os problemas fundamentais enfrentados nos diferentes sectores, quais sao as suas prioridades, e qual a viabilidade de o ESMI poder contribuir para a sua solucao.

Nesse perspectiva gostaria de dar inicio a uma fase mais avancada do debate entre nos no dia e no lugar acima especificados. Espero que venham todos. Estao explicitamente convidados tanto os participantes do curso/oficina de ESMI de 1986 como os de 1989.

Ate a Quarta Feira.



This message specifically invited not only participants of the ESMI-2 workshop, but also those of the ESMI-1 workshop to a meeting concerning strategies to implement the ESMI methodology in the daily practice of instructional design, only a few days before the facilitator would leave the field, asking the questions:

- * Who will facilitate ESMI without a facilitator?
- * How shall we continue the learning we already began?
- * How shall we be going to implement what we have learned?
- * How can we organize our work so as to ensure an efficient implementation of the various aspects of ESMI in the different sectors that participated in the courses?
- * What already existing experience could serve as a base for future development?

The message furthermore made clear that:

ESMI is a means, not an end! For that reason, before responding to the above type of questions, it will be necessary to first have a clear view of what the fundamental problems are that the different sectors are facing, what are their priorities, and what is the likelihood that ESMI can contribute to their solution.

The suggested debate should be seen as the beginning of "a more advanced phase of the debate among us".

To close this appendix, two messages are shown that were prepared by students. The first one (Data Base Item 2.2.1.127) was distributed by a newly created group, emerged from the meeting referred to in the previous message, that had been given the task to promote activities in the interest of the implementation of the ESMI methodology. The text on the cover reads:

Did you know that from now on you are a member of a new club???

And on the inside it continues:

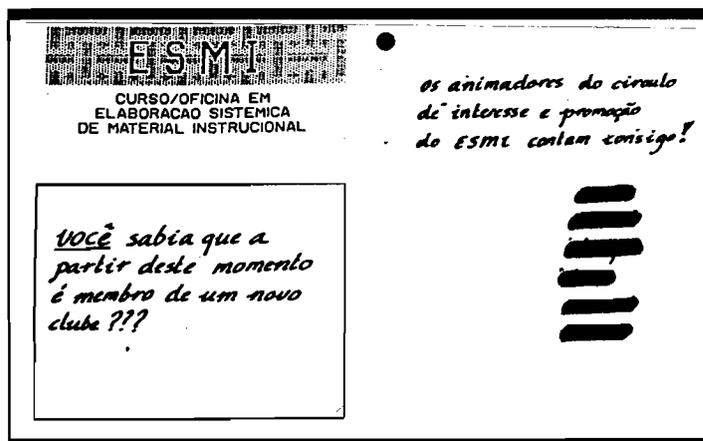
The animators of the interest group to promote ESMI count on you! [Six signatures deleted.]

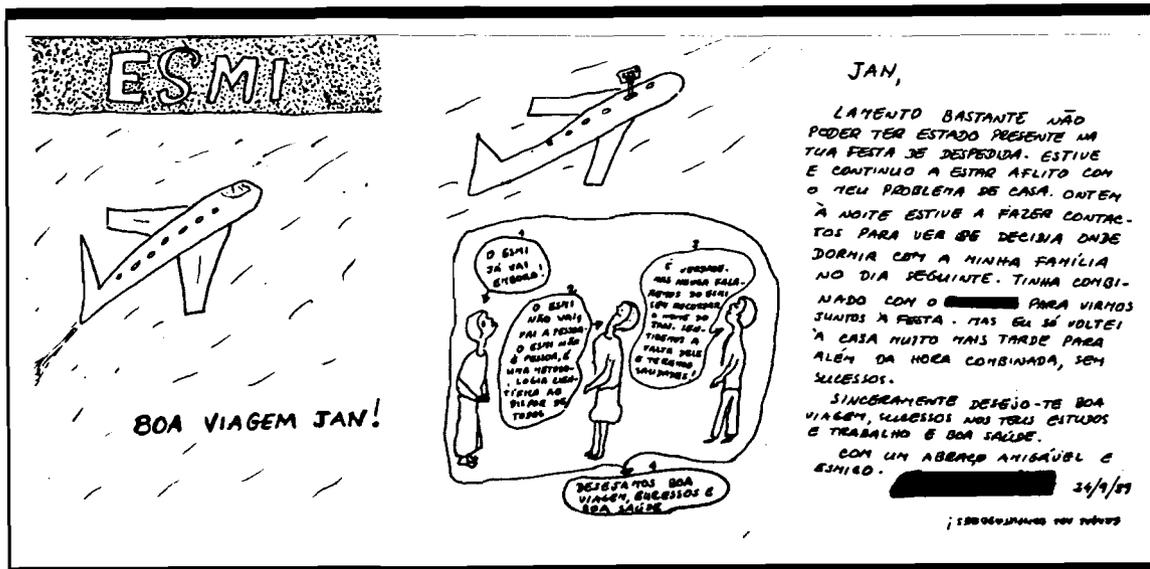
The last message shown (Data Base Item 2.2.1.129) reached the facilitator on the day of his departure. It was an apology from a student who had been unable to attend the facilitator's farewell party as he had just lost his house.

The message is reproduced on the next page. The text accompanying it speaks for itself. The translation reads as follows:

Cover: Have a good trip, Jan.

- Inside:*
1. ESMI is already going away!
 2. ESMI doesn't go away. Only the person goes. ESMI is not a person, it is a scientific methodology available for all.
 3. That's true. But we'll never talk about ESMI without remembering Jan's name. We'll miss him, and we'll be longing for him!
 4. We wish him a good trip, success, and good health.





The text on the inside continues:

I'm very sorry that I was unable to be present at your farewell party. I was afflicted, and will continue to be afflicted by the problem of my house. Yesterday night I was trying to get in touch with people to find out whether the next day I would be able to sleep somewhere with my family. I had arranged with [name deleted] to come to the party together. But I only got back home much later than the time we had agreed, without success.

It ends with "warm and friendly ESMI greetings."

APPENDIX 10

Overview of conclusions drawn in research assistants' independent report about *The motivational/demotivational influence of the messages.*

The conclusions specified in this appendix are part of a larger report, in Portuguese, prepared jointly by the two research assistants who participated in the study on the motivational messages strategy in the role of participant observers. In the report itself the conclusions are substantiated by reference to quotes and observations recorded by the research assistants as well as other elements drawn from the data base.

List of 9 conclusions presented in the research assistants' independent report:

- 1) The messages are considered to be representing the physical presence, though in an indirect way, of the facilitator of the ESMI course.
- 2) With regard to the above, they represent a word of comfort, a friendly word, a word of sympathy, coming from a friend who once more remembers his friends in times of joy as well as in times of sacrifice and sadness.
- 3) The messages represent the strengthening of energies, the renewal of commitments (joint undertakings by the participants and the facilitator), providing new impulses to the actions in progress, calling for the mobilization of new initiatives so as to meet the goal requirements.
- 4) The messages create an atmosphere of conviviality and, to an extent, of disposition towards each other, amidst the participants, as they bring them closer to each other, even though on a few occasions the messages were not the same. Every one feels and reveals that s/he is receiving the same treatment from the course facilitator as everyone else, which renews the atmosphere of confidence and mutual acceptance between the participants as well as that of reciprocity in the way people treat each other.

- 5) The messages are also a means to inform about and to draw attention to what is happening, i.e. about the ESMI course and in the world surrounding it. As one example from among many, reference is made to the case of a woman, colleague of one of the participants, who herself did not take part in the course, who, when she saw one of the participants of the course receive a message, asked if she could photocopy it for her family.
- 6) Related to the above point, it is also considered to have been of great importance that the understanding and support from members of the family and household of some of the participants could be rallied [through the messages].
- 7) In addition to point 3 above, the messages are also important in keeping the facilitator himself in constant motivational equilibrium and in a state of conscious conviction regarding the work he is carrying out.
- 8) With respect to the last point, the messages have a still more profound and longer lasting effect. This is characterized by the joint acceptance of responsibility in relation to the course work, but it also cultivates a new relationship of belonging together, that is, people are no longer just participants and colleagues, but they become members of the same family. This type of family relationship makes that responsibilities in finding solutions for other problems, that have nothing to do with the course, are shared.

- 9) Owing to the messages' format, their illustration, the judicious language used, and their impact, we find that a considerable part of the participants took the initiative to communicate in the same way, both with the facilitator and between themselves, liberating, in doing so, their own creative power.

APPENDIX 11

Overview of students' participation in the ESMI-2 course and final results obtained.

All students were expected to participate in the inaugural session and in all regular work sessions. Participation in the open sessions was optional.

The following meanings should be attributed to the final qualifications listed:

Satisfactory: 60 % or more, but less than 70 %

Good: 70 % or more, but less than 80 %

Very good: 80 % or more, but less than 90 %

Distinction: 90 % or more.

Below criterion corresponds to 59 % or less.

OVERVIEW OF PARTICIPATION IN WORK SESSIONS ESMI-2 WORKSHOP AND FINAL COURSE ACHIEVEMENT

ENTITY	STUDENT	STATUS	INAUGURAL SESSION (1)	REGULAR SESSIONS (21)	OPEN SESSIONS (8)	ACHIEVEMENT/ OBSERVATIONS
P	01	regular	1	16	4	<u>Below criterion</u>
	02	regular	1	18	4	<u>Satisfactory</u>
	03	regular	1	16	5	<u>Good</u>
	04	regular	1	21	7	<u>Below criterion</u>
	05	regular	1	4		<i>Abandoned service</i>
	06	regular	1	14	4	<u>Very good</u>
	07	regular	1	17	4	<u>Satisfactory</u>
	08	regular	1	21	5	<u>Good</u>
	09	regular	1	18	5	<u>Satisfactory</u>
	10	<i>special</i>			3	<i>Limited study tasks</i>
	11	<i>invitee</i>	1	13	4	<i>No outcome expected</i>
Q	12	<i>special</i>		6	1	<u>Good</u>
	13	<i>special</i>	1	16	2	<u>Very good/Res.Ass.</u>
R	14	regular	1	17	3	<u>Satisfactory</u>
	15	regular	1	18	4	<u>Satisfactory</u>
	16	regular		14	1	<u>Below criterion</u>
	17	regular	1	19	4	<u>Good</u>
	18	regular	1	17	3	<u>Good</u>
	19	<i>special</i>	1	17	4	<i>Researchassistant</i>
	20	<i>special</i>	1	17	4	<i>Concluding project</i>
	21	<i>special</i>		12		<i>Theory only</i>
	22	<i>special</i>		12		<i>Theory only</i>
	S	23	regular	1	2	
24		regular	1	3		<i>Withdrew</i>
25		regular	1	18	4	<u>Satisfactory</u>
26		regular	1	4		<i>Withdrew</i>
27		<i>special</i>		11		<u>Very good</u>
28		<i>invitee</i>		3		<i>No outcome expected</i>
T	29	regular	1	6		<i>Withdrew</i>
	30	regular	1	3		<i>Withdrew</i>
	31	regular	1	3	1	<i>Withdrew</i>
	32	regular	1	20	2	<u>Good</u>
U	33	<i>candidate</i>				<i>Did not participate</i>
	34	<i>candidate</i>				<i>Did not participate</i>

APPENDIX 12

Importance ratings for instructional strategy components of ESMI-2 workshop.

The results presented in this appendix were obtained using the instrument of Appendix 3 (Data Base Item 2.2.7.014). They are presented here in numerical order, rather than the order in which the students responded to the various prompts. The meanings of the various ratings are as follows:

- 1 = has (almost) no importance whatsoever; could probably be done away with*
- 2 = contributes moderately to achieving the goal; not including it would have been of influence, but not dramatically*
- 3 = important; not including it would have given rise to clearly inferior result*
- 4 = of great importance; not including it would have affected the result in a dramatic way*
- 5 = of extreme importance; not including it would have made it impossible to reach the main objectives.*

Importance ratings for instructional strategy components of ESMI-2 workshop:

	Ratings	Mean	Standard Deviation
Component 01: Study of Dick & Carey textbook	1 2 xx 3 xx 4 xxx 5 xxxxxxxxxxxxxxxx	4.38	1.02
Component 02: Study of additional instructional materials	1 2 xx 3 xxxxxx 4 xxxxx 5 xxxxxxxx	3.90	1.04
Component 03: Class presentation of theories and methodologies	1 2 xx 3 x 4 xxxxxxxx 5 xxxxxxxxxxxxxxxx	4.29	0.96
Component 04: Class discussion of materials studied	1 2 xxx 3 xxx 4 xxxxxxxx 5 xxxxxxxx	3.95	1.07
Component 05: Carrying out exercises	1 2 x 3 xxxxxx 4 xx 5 xxxxxxxxxxxxxxxx	4.29	1.01
Component 06: Carrying out of individual design project	1 2 3 xx 4 xx 5 xxxxxxxxxxxxxxxxxxxx	4.71	0.64
Component 07: Consulting with facilitator	1 2 xxx 3 xxxxx 4 xxxxxx 5 xxxxxxxx	3.81	1.08
Component 08: Class presentations by participants	1 xxxxx 2 xxxxx 3 xxxxxxxx 4 xx 5 xx	2.57	1.25

Importance ratings for instructional strategy components of ESMI-2 workshop (continued):

	Ratings	Mean	Standard Deviation
Component 09: Writing of report about individual design project	1 2 3 xx 4 xx 5 xxxxxxxxxxxxxxxxxxxx	4.71	0.64
Component 10: The three tests about the Dick & Carey textbook	1 2 x 3 x 4 xx 5 xxxxxxxxxxxxxxxxxxxx	4.67	0.80
Component 11: Provision of feedback by facilitator about results obtained	1 2 3 xx 4 xxx 5 xxxxxxxxxxxxxxxxxxxx	4.67	0.66
Component 12: Guidance by the facilitator of the participants	1 2 xxx 3 xx 4 xxxxxxxx 5 xxxxxxxx	4.00	1.05
Component 13: Systematic communication between facilitator and participants through "little notes"	1 x 2 xxx 3 xxxxxxxx 4 xxx 5 xxxxx	3.38	1.16
Component 14: Stimulation by facilitator of interaction between participants	1 2 xxx 3 xxxxxxxx 4 xx 5 xxxxxxxx	3.71	1.15
Component 15: Collaboration by participants in formative evaluation of workshop	1 x 2 x 3 xxxxxxxx 4 xxxxxxxx 5 xxxxx	3.62	1.02
Component 16: Visit to Schoolbook Publishing House	1 xxxxx 2 xxxxxxxx 3 xxxxxx 4 5 x	2.19	0.98

APPENDIX 13

Instructional and motivational importance ratings for media used in ESMI-2 workshop.

The results presented in this appendix were obtained using the instrument of Appendix 4 (Data Base Item 2.2.2.025). The meanings of the various ratings are as follows:

- 1 = has (almost) no importance whatsoever; could probably be done away with*
- 2 = contributes moderately to achieving the goal; not including it would have been of influence, but not dramatically*
- 3 = important; not including it would have given rise to clearly inferior results*
- 4 = of great importance; not including it would have affected the results in a dramatic way*
- 5 = of extreme importance; not including it would have made it impossible to reach the main instructional/motivational goals.*

Instructional and motivational importance ratings of media used in ESMI-2 workshop:

	Ratings instructional importance	Ratings motivational importance	Mean/S.D. instructional importance	Mean/S.D. motivational importance
Medium 1: Documentation distributed before the beginning of the course	1 xxxxxxxx 2 xxxx 3 xx 4 5 xxxxxx	1 2 xxxx 3 xxxxx 4 xxxxxx 5 xxxxxx	2.52/1.72	3.67/1.11
Medium 2: Gantt chart of course/workshop activities	1 xxx 2 xxx 3 xxxxx 4 xxxxxxx 5 xxxx	1 xx 2 xxxx 3 xxxxxx 4 xxxxxx 5 xxxx	3.27/1.32	3.27/1.24
Medium 3: Contract signed between participant and facilitator	1 xxxxxxxxxxxxxxx 2 xx 3 x 4 xxx 5 xxx	1 xxxxxxx 2 xxxxx 3 x 4 xxxxx 5 xxxxx	2.14/1.58	2.73/1.58
Medium 4: Dick & Carey textbook	1 2 x 3 x 4 xx 5 xxxxxxxxxxxxxxxxxxx	1 xxxxx 2 xx 3 xxxxxxx 4 xxxxx 5 xxx	4.68/0.78	2.91/1.34
Medium 5: Additional instructional materials	1 2 x 3 xxx 4 xxxxxxx 5 xxxxxxxxxxx	1 2 x 3 xxxxxxx 4 xxxxx 5 xxxxxxxxxxx	4.27/0.88	4.05/1.00
Medium 6: "Little notes" distributed all along the course/workshop	1 xxxxx 2 xxxxx 3 xxxxx 4 xxxxx 5 xxx	1 2 xxx 3 xxxxx 4 xxxxx 5 xxxxxxx	2.86/1.39	3.91/1.11
Medium 7: Facilitator (with support of marker board + OHP)	1 2 3 xxxxx 4 xx 5 xxxxxxxxxxxxxxxxxxx	1 x 2 3 x 4 xxx 5 xxxxxxxxxxxxxxxxxxx	4.55/0.80	4.59/0.96
Medium 8: Activities Manual	1 2 xxxxx 3 xx 4 xxx 5 xxxxxxxxxxx	1 x 2 xxxxx 3 xxxxxx 4 xxxxx 5 xxxxxx	3.90/1.26	3.48/1.25
Medium 9: Colleagues with whom you had the opportunity to interact	1 x 2 xxx 3 xxxxxx 4 xxx 5 xxxxxxx	1 x 2 x 3 xxxxx 4 xxxxxx 5 xxxxxxx	3.68/1.25	3.95/1.13

APPENDIX 14

Overview of perceived motivational and demotivational influences during ESMI-2 workshop.

The results presented in this appendix were obtained using an instrument of the kind shown in Appendix 1 (Data Base Item 2.2.7.013). While this instrument was normally used to assess students motivational status on the basis of what had happened during the week preceding it, in this particular case the students had been asked to reflect on their experiences during the whole course. They were also encouraged to mention more than three aspects, if they felt this would provide a better answer. In cases where a particular aspect was mentioned more than once, this has been indicated by the number in parenthesis.

The instrument was administered one week before the last regular class session. A number of students continued to work individually on the completion of their course assignments in the period following it.

Perceived demotivational influences during the ESMI-2 workshop:

- Objectives not clear at the beginning
- Difficult tests
- Lack of time to conclude exercises during class sessions
- Unavailability of the test audience when attempting formative evaluation of materials
- Reluctance of the public to participate in formative evaluation of materials
- (2) Impossibility to attend class sessions / coincidence with work obligations
- (4) Lack of time in comparison with the amount of work involved
(Little group work as compared with individual work and debate sessions [observation by student who had not participated in most of the sessions])
- (10) The book
- (5) Discontinuance of the participation of some (broken pledges)
- (2) Duration of course too short
- Insufficient guidance as regards deadlines to be observed
- Activity 8 [this refers to the *Activities Manual*: Drafting the second part of the design report]
- Open sessions coinciding with work commitments (in the end)
- Low grades
- Difficulties in applying acquired knowledge
- (4) Interference of work obligations in course work
- Failure to meet deadline first report
- Delays in carrying out formative evaluation of designed instructional materials
- Occasional failures to arrive in time for class
- Lengthiness of some of the topics in the book, which did not contribute to learning
- (2) Fact that the course was not given on the basis of full-time participation
- Failure to participate by some
- Not having had any previous experience in the design of whatever instructional material
- Having been (practically speaking) the sole representative of the employing entity
- Partitioning of drafting tasks of report in portions that were too long
- Not having the opportunity to draft the second part of the design report
- Lack of previous awareness of the importance of the course
- Lack of permanent balance as regards completing the ESMI activities [This probably refers to incompatibility between work and study commitments]
- Formative evaluation of designed materials coinciding with school vacation
- Positioning at the tail end of the course of in-depth treatment of a number of interesting topics.

Perceived motivational influences during the ESMI-2 workshop:

- (2) Exchange of experience
- (2) Willingness of the facilitator
- Rapid feedback
- Planned rhythm of work
- Introduction to theories of learning
- (5) "Little notes" / "mail" / "cards" (coinciding with worst moments of demotivation)
- Documents rich in ESMI information
- (2) Applicability of ESMI concepts in other areas of work
- Constant stimulus from facilitator
- (2) Constant stimulus from fellow students
- (6) Relevance of course as regards work
- (3) Study visit to Schoolbook Publishing House
- (4) The open class sessions
- (2) Presence of the facilitator
- (4) Readiness of the facilitator
- (4) Conviviality
- Theory followed by practice
- Formative evaluation carried out
- Open dialogue with the participants
- (6) Good work environment
- Presence of professionals from different sectors
- (3) Work in rotating group structures, leading to possibility to know other participants and to interaction between colleagues
- Way in which results of work carried out were communicated
- (3) Preparedness/availability shown by the facilitator
- Spirit of help and cooperation
- (2) Availability of materials to study from
- (2) Treatment of new topics / Enrichment of existing educational knowledge
- Ease with which participants talk
- Dealing with the outside world (outside the office)
- Participation of staff in directive positions (demonstrating the importance of the course)
- (2) Friendship found in totally heterogeneous group
- Structuring of class sessions, beginning with individual work, then group work, and finally class based procedures
- (3) The fact that the facilitator has never missed a class or been late for it
- Positive role played by facilitator (flexibility, etc.)
- (2) Organization of the course / kind of procedures used
- (2) Individual guidance of the participants by the facilitator
- Having succeeded to attend almost all class sessions
- To be on the way to succeed
- Having been able to participate to the end, despite the difficulties
- The results of the tests
- Getting nearer to the finish
- (2) Products starting to appear as a result of the work.