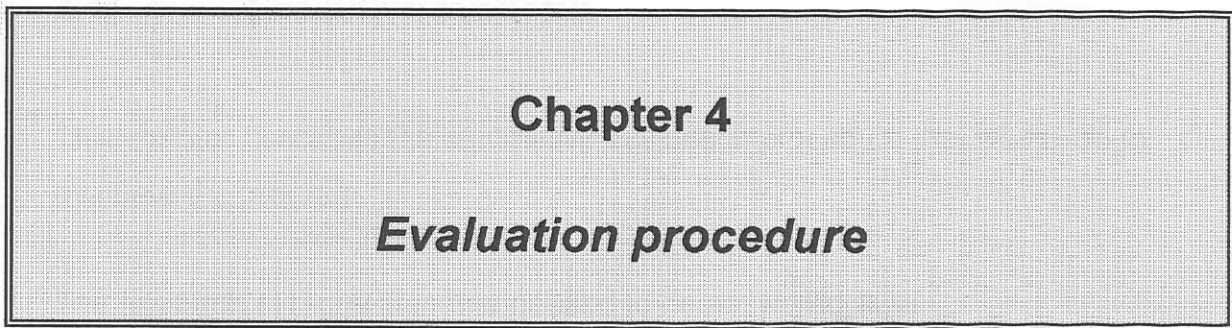


CHAPTER 4
EVALUATION PROCEDURE

Chapter 4

Evaluation procedure



EVALUATION PROCEDURE

4.1 Executive overview

This chapter describes the summative evaluation procedure that was used to evaluate the program.

The research sub-question that needed to be answered, was:

How well is this program working?

The target population, the selection process of the samples, and the data collection process are discussed. The data collection process includes the instruments used as well as the procedure of collecting data.

The evaluation of the program was conducted to determine if, and to what extent, the program that was developed, answered the main research question. The main research question that needed to be answered is:

How can multimedia be used to create and develop an attention getting, realistic environment to simulate the field hospital and provide information to prepare military nurses for functioning during military operations?

4.2 Introduction

According to Hannafin and Peck (1988:301), summative evaluation is not conducted to identify features for modification or revision. It is an end in itself and does not usually result in subsequent modification of the content of the program or the procedures.

Vaughan (1998:546) adds that the beta testing group should be representative of real users. They must not have any preconceived ideas and must provide comments, suggestions and detailed descriptions of any problems that occurred. If the testers' comments are overlooked or ignored, the testing effort is wasted (Vaughan, 1998:546).

4.3 Target population and sample

The target population for the development of this program was registered nurses, male and female, who were Permanent Force members. For the evaluation of this program, the researcher decided to broaden the target group in order to discover if the program would also be suited for groups within the military environment, other than nurses.

The samples for this evaluation were selected as follows:

- A purposive sampling of four registered nurses who had been previously deployed in a SANDF operation and/or exercise.
- A convenience sampling of four other registered nurses and six military personnel other than nurses.
- A convenience sampling of four experts in multimedia design.

4.4 Data collection process

4.4.1 Instruments used

The following instruments were used:

4.4.1.1 User evaluation questionnaire

The user evaluation questionnaire was used to evaluate if the design objectives as indicated in Table 4.1 were met in the program developed for the main research question to be answered.

A combination of Reeves & Harmon's (1994) "User Interface Rating Tool for Interactive Multimedia", Jones and Okey's (1995) "Interface Design for Computer-based Learning Environments" and the "Interface Design" of Lynch & Horton (1997), were used to develop the evaluation form. (See **Appendix I**).

The questionnaire consisted of 27 questions:

- One question to determine whether the respondents had previously deployed during military operations/exercises.
- One question regarding their familiarity with the Internet.
- The mustering of the respondents was determined in one question.
- The users had to rate 16 aspects pertaining to the program on a five point scale.
- Four different recommendations on improving the program content were listed which could be indicated if found to be applicable.

- Three other questions, relating to improvements to the program, the value of the program and the applicability to other target groups, were asked.

Table 4.1 indicates the relationship between the research questions and the questionnaire.

Table 4.1 Design objectives to be met in the program for the main research question to be answered

Design objectives	Aspects of user interface dimensions that had to be evaluated by the user	Dimensions of user interface rated by experts
* Use multimedia to create and develop the program, with the application of sound design specifications	<ul style="list-style-type: none"> * The layout of the screen and the overall "look" is pleasing. * The program looks professional with high editorial standards. * The interactive elements of the program work reliably. * The content is presented in manageable segments. * I felt overwhelmed by numerous options. * The organisation of the program should be improved. * I knew at all times where in the program I was and how to go to another section of the program. * I knew at all times how much of the information I had interacted with (visited) and which parts of it I hadn't. * The screen is not cluttered with too much text. * The colour of the text provides for good visibility. * More visual material should be added. 	<ul style="list-style-type: none"> * Aesthetics * Design stability * Design stability * Closure * Closure * Closure * Navigation * Mapping * Screen design * Screen design * Screen design
		<ul style="list-style-type: none"> * Simplicity and consistency * Metaphor or theme * Media integration

Design objectives	Aspects of user interface dimensions that had to be evaluated by the user	Dimensions of user interface rated by experts
* Simulate the deployment of the field hospital	<ul style="list-style-type: none"> * The simulation of the field hospital deployment provides for sufficient user involvement to make experience meaningful. * The opportunity to simulate the deployment of the field hospital gives me sufficient information to be able to apply this information during the planning and deployment phases of military operations. 	<ul style="list-style-type: none"> * Information presentation * Information presentation
* Provide information to prepare the military nurse for functioning during military operations .	<ul style="list-style-type: none"> * I will be able to use what I learned in this program. * The content is sufficient to prepare me for functioning during military operations. * The content covered in the program should be reduced. * The content covered in the program should be increased. * Make recommendations for improvement. * Indicate most valuable aspect of program. 	<ul style="list-style-type: none"> * Information presentation
* Create/keep attention .	<ul style="list-style-type: none"> * This program caught and held my attention. * I enjoyed using this program. 	<ul style="list-style-type: none"> * Ease of use

4.4.1.2 Interface rating form for experts

Expert multimedia users were asked to rate the program using an user interface rating form. The design specifications as used by the researcher are indicated in Table 3.6 in Chapter 3.

A combination of Reeves & Harmon's (1994) "User Interface Rating Tool for Interactive Multimedia", Jones and Okey's (1995) "Interface Design for Computer-based Learning Environments", and the "Interface Design" of Lynch & Horton (1997), was used to develop the rating form.

The rating form consisted of 12 questions (See **Appendix J**). The experts had to rate the program on a one to five scale by marking the appropriate number under each

indicated dimension. Space was provided for any comments/ suggestions.

4.4.2 Collecting data

To be able to evaluate the program, the researcher had to make appointments with users and experts and then had to take her computer to the users and experts because none of the users and only some of the experts had access to the *Dreamweaver®* and/or *Internet Explorer®* programs. As a result of this, it was not possible to access more than a maximum of two users per day to evaluate the program. Four users came to the researcher's house to look at and evaluate the program.

On an average it took the users 75 minutes to work through the program and to complete the questionnaire. Aspects such as the heavy workload of users, made data collection difficult, because appointments were cancelled at short notice and other users had to be found to evaluate the program. It is not known how long it took the experts to evaluate the program or to complete the questionnaire, since the experts executed this task in isolation.

The expert interface rating forms and the user evaluation questionnaires were completed and returned to the researcher, while the users handed the questionnaires back to the researcher on the same day.

4.4.3 Analysing the data

An analysis of the data generated by the user evaluation questionnaires, the expert interface rating forms, and the findings of the analyses are discussed in **Chapter 5**.