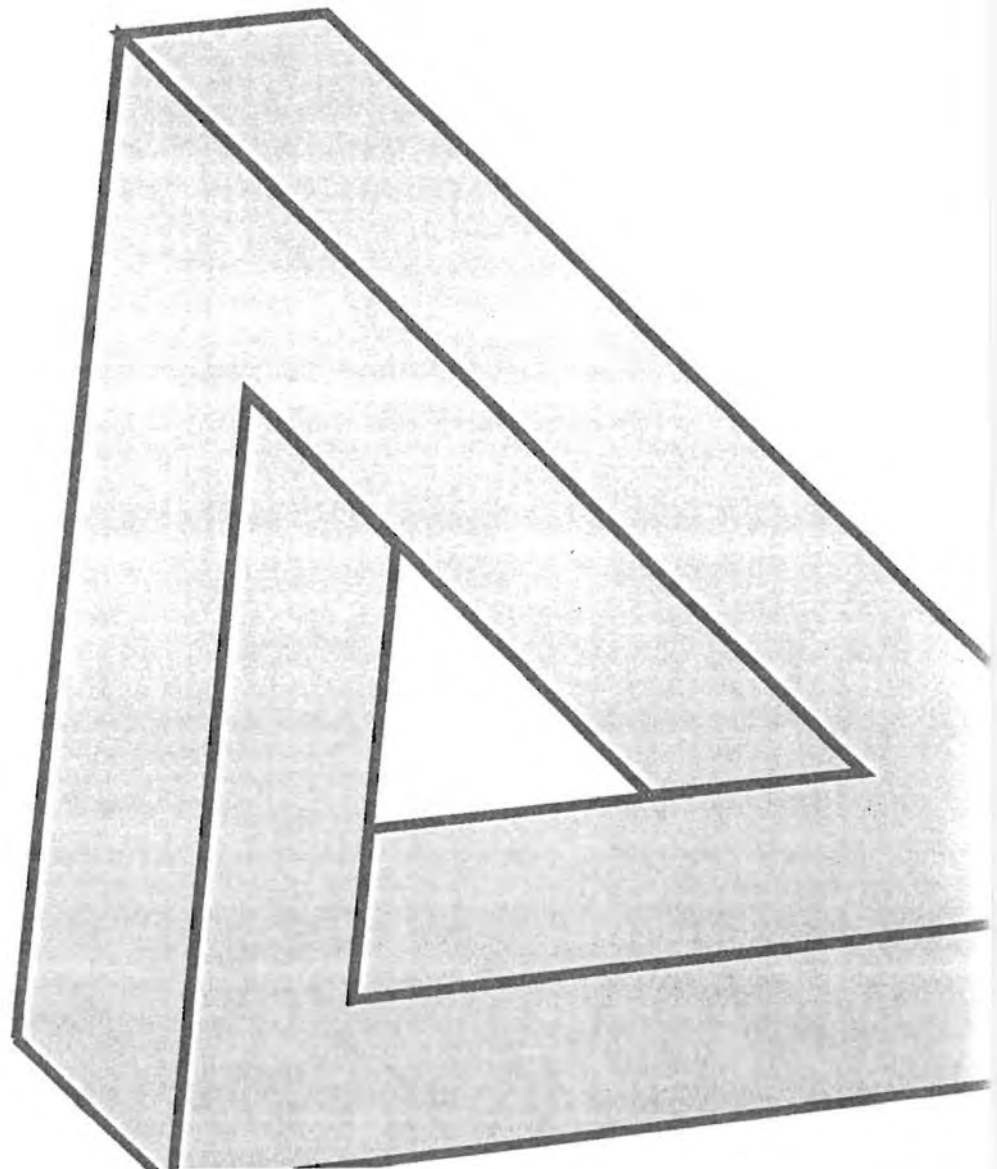


3

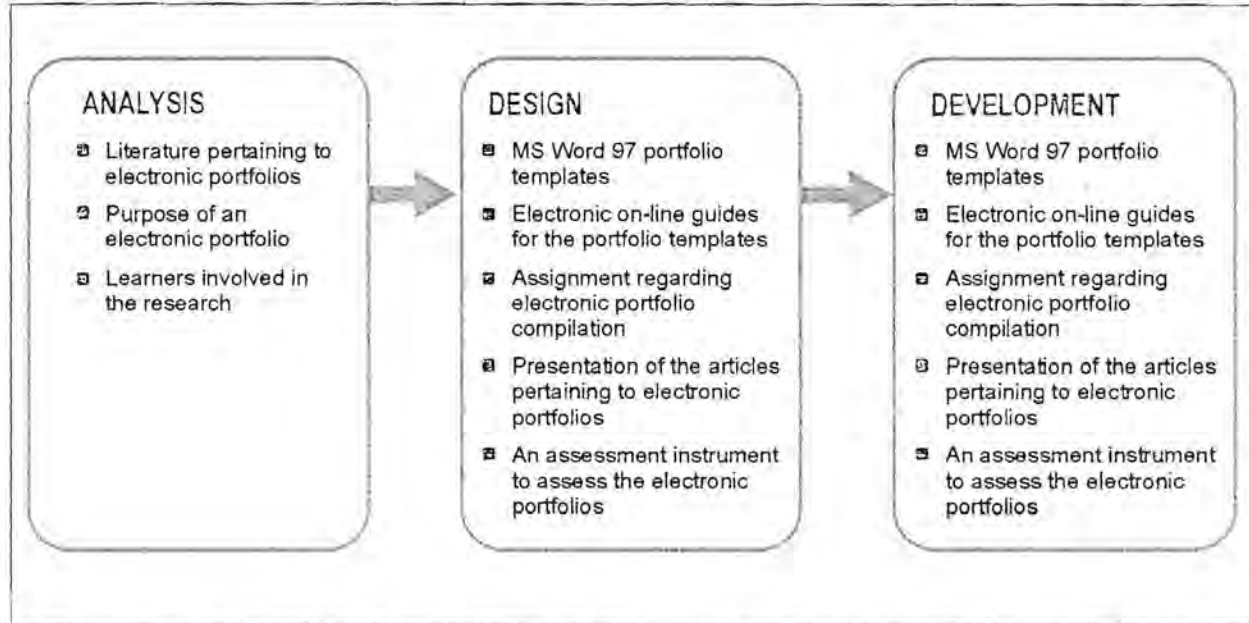
Analysis, Design & Development



3.1 Introduction

The processes preceding the design and development phases, as well as the techniques that will be used to design and develop the templates for the electronic professional developmental portfolio, will be described in this chapter. A summary of the contents of Chapter 3 is presented graphically in Figure 3.1.

Figure 3.1: The analysis, design and development phases



3.2 The analysis phase

An analysis of many different applicable aspects has to be implemented and completed preceding any design and/or development of educational programmes. In this case it was essential to analyse the literature regarding electronic portfolios, the purpose of an electronic developmental portfolio, as well as the target group of learners for whom the portfolio templates will be developed.

3.2.1 Analysis of relevant literature

The essential components that should be present in a developmental portfolio were identified during the literature study. Although a few variations existed, most authors agree on the basic components of an electronic developmental portfolio. A summary of the components as identified during the literature study, is presented in Table 3.1.

Table 3.1: Components of an electronic portfolio as identified during the literature study

Component	Description
Interface	<p>The interface of an electronic portfolio should comply with the following:</p> <ul style="list-style-type: none"> ▪ It should be a simple user-interface to ease use of the portfolio (Mt. Edgecumbe High School, 1999a). ▪ A custom header should be used to present the information logically (Mt. Edgecumbe High School, 1999a). ▪ The electronic portfolio should run mechanically and technically error-free (Mt. Edgecumbe High School, 1999a). ▪ It should contain active links to applicable sources (Kalamazoo College, 1997a).
Multimedia Components	<p>A variety of multimedia components could be included, namely:</p> <ul style="list-style-type: none"> ▪ Descriptive text (Wiedmer, 1998). ▪ Scanned copies of applicable documents (The School Page, 1996). ▪ Applicable graphics and photographs of relevance e.g. graduation photograph (Kizlik & Associates, 1997-1999; Mt. Edgecumbe High School, 1999a; The School Page, 1996; Hurst, Wilson & Cramer, 1998). ▪ Digitised videos (Kizlik & Associates, 1997-1999; Mt. Edgecumbe High School, 1999a; Wiedmer, 1998). ▪ Voice over/sound (Mt. Edgecumbe High School, 1999a; Wiedmer, 1998). ▪ Applicable animations (Wiedmer, 1998).
Table of Contents	<p>The table of contents of the electronic portfolio can be presented in different formats, namely:</p> <ul style="list-style-type: none"> ▪ A traditional table of contents with a short explanation or description of the sample which explains the reason for including it (Mt. Edgecumbe High School, 1999a; Hurst, Wilson & Cramer, 1998; St. Norbert College, 1996).

Table 3.1: Components of an electronic portfolio as identified during the literature study (continued)

Component	Description
Table of Contents (continued)	<ul style="list-style-type: none"> ▪ An index and description of all items (Tillema, 1998). ▪ An introductory letter or menu (St. Norbert College, 1996).
Personal Data	<p>Depending on the circumstances, different types and levels of personal data can be included, namely:</p> <ul style="list-style-type: none"> ▪ A personal cover page including name, address, telephone number and e-mail address (Mt. Edgecumbe High School, 1999a; Mt. Edgecumbe High School, 1999b; St. Norbert College, 1996; Hurst, Wilson & Cramer, 1998; The School Page, 1996). ▪ Family history and personal demographics or a brief biographical sketch (Mt. Edgecumbe High School, 1999a; Lankers, 1998; The School Page, 1996; Kalamazoo College, 1997b). ▪ Information regarding friends and family as well as cultural background, home and school community (Untch, [s.a.]; Kalamazoo College, 1997a; Mt. Edgecumbe High School, 1999a; Lankers, 1998).
Academic history/data	<p>The academic history will provide the educator as well as learners with an overview of their progress and can include the following:</p> <ul style="list-style-type: none"> ▪ Academic records e.g. subjects passed per year (Mt. Edgecumbe High School, 1999a; Lankers, 1998; Garnhart, 1996). ▪ A history of education e.g. institutions attended and all qualifications (certificates/diplomas/degrees) obtained (Mt. Edgecumbe High School, 1999a; Lankers, 1998; Mt. Edgecumbe High School, 1999b). ▪ Progress reports regarding studies (Untch, [s.a.]). ▪ Course materials of some or all of the subjects/courses taken (Iowa State University, [s.a.]).

Table 3.1: Components of an electronic portfolio as identified during the literature study (continued)

Component	Description
Skills	<p>One of the main advantages of an electronic portfolio is that it enables learners to provide proof of specific skills and competencies. It can be done by including:</p> <ul style="list-style-type: none"> ▪ Examples of written/oral expressions as presented in assignments etc.(Kalamazoo College, 1997a). ▪ Materials showing the extent of learning by the learner (Iowa State University, [s.a.]). ▪ Samples of different learning activities (Hurst, Wilson & Cramer, 1998). ▪ A description and demonstration of skills and competencies (Kalamzoo College, 1997b; Illinois State University, 1998b; Garnhart, 1996; Mt. Edgecumbe High School, 1999a; Lankers, 1998).
Projects	<p>Electronic portfolios should include examples of projects to demonstrate the applicable skills and competencies. Projects can be presented in different formats, including:</p> <ul style="list-style-type: none"> ▪ A description and demonstration of activities associated with applicable projects (Kalamazoo College, 1997b). ▪ Work samples and models of excellent academic and other work (Pawluk, 1999; Hurst, Wilson & Cramer, 1998; Barret, 1998; Mt. Edgecumbe High School, 1999a; Lankers, 1998). ▪ Work-in-progress as well as completed projects (Mt. Edgecumbe High School, 1999a; Lankers, 1998). ▪ Evaluation reports of teaching/learning (Iowa State University, [s.a.]). ▪ Examples of teamwork (Mt. Edgecumbe High School, 1999a; Lankers, 1998).
Work experience	<p>A record of the learners work experience is essential and can be presented as:</p> <ul style="list-style-type: none"> ▪ An up-to-date résumé (Mt. Edgecumbe High School, 1999a; Illinois State University, 1998b; Garnhart, 1996;

Table 3.1: Components of an electronic portfolio as identified during the literature study (continued)

Component	Description
Work experience (continued)	Kalamazoo College, 1997b; Hurst, Wilson & Cramer, 1998; Untch, [s.a.]; Kalamazoo College, 1997a). <ul style="list-style-type: none"> ▪ An overview of work history and experiences including employer's details and period of employment (Mt. Edgecumbe High School, 1999a; Lankers, 1998).
Letters of reference	The following types of letters of reference can be included: <ul style="list-style-type: none"> ▪ Letters of reference and recommendation from educators or employers (Mt. Edgecumbe High School, 1999a; The School Page, 1996; Hurst, Wilson & Cramer, 1998). ▪ Peer evaluations (The School Page, 1996).
Goals/career planning	Information regarding the learner's goals and career planning provides the reader with more information about that person may include: <ul style="list-style-type: none"> ▪ Objectives and goals for the future (Mt. Edgecumbe High School, 1999b; Iowa State University, [s.a.]; Barret, 1998). ▪ Answers to commonly asked questions in interviews (Illinois State University, 1998b; Garnhart, 1996). ▪ Information regarding professional career planning and readiness (Illinois State University, 1998b; Garnhart, 1996; Untch, [s.a.]; Kalamazoo College, 1997b; Kalamazoo College, 1997a). ▪ The learner's commitment to lifelong learning (Untch, [s.a.]). ▪ Career aspirations (Mt. Edgecumbe High School, 1999a; Lankers, 1998).
Achievements/Awards	Academic as well as non-academic achievements and awards received should be presented in the electronic portfolio, including: <ul style="list-style-type: none"> ▪ Leadership roles (Mt. Edgecumbe High School, 1999a; Lankers, 1998; Untch, [s.a.]).

Table 3.1: Components of an electronic portfolio as identified during the literature study (continued)

Component	Description
Achievements/Awards (continued)	<ul style="list-style-type: none"> ▪ Personal accomplishments (Mt. Edgecumbe High School, 1999a; Lankers, 1998). ▪ Recognition and awards presented for good work (Mt. Edgecumbe High School, 1999a; Mt. Edgecumbe High School, 1999b; Lankers, 1998; Iowa State University, [s.a.]). ▪ Honors presented by educational and other institutions for outstanding achievements (Mt. Edgecumbe High School, 1999a; Lankers, 1998; Mt. Edgecumbe High School, 1999b; Iowa State University, [s.a.]).
Self-reflections/evaluation	<p>Self-reflection is one of the most important components of an electronic portfolio and should be included as:</p> <ul style="list-style-type: none"> ▪ Self-evaluation of strengths and weaknesses (Pawluk, 1999; Tillema, 1998; van Niekerk, 1998, Kizlik & Associates, 1997-1999). ▪ Reflections on all learning experiences (Tillema, 1998; Hurst, Wilson & Cramer, 1998; Barret, 1998; van Niekerk, 1998, Kizlik & Associates, 1997-1999; Mt Edgecumbe High School, 1999a). ▪ Reflections on prior learning (van Niekerk, 1998). ▪ Demonstrations of the ability to assume responsibility for learning (van Niekerk, 1998).
Community activities	<p>Information about the learner's involvement in the community could be presented regarding:</p> <ul style="list-style-type: none"> ▪ Involvement in the community and accepting social responsibilities within the community (Untch, [s.a.]; Kalamazoo College, 1997a). ▪ Involvement in community service projects and volunteer organisations (Mt. Edgecumbe High School, 1999a; Lankers, 1998).

Table 3.1: Components of an electronic portfolio as identified during the literature study (continued)

Component	Description
Leisure activities	Information regarding leisure and other activities should also be presented, including information regarding: <ul style="list-style-type: none"> ▪ Hobbies (Mt. Edgecumbe High School, 1999a; Lankers, 1998). ▪ Sport and leisure activities (Mt. Edgecumbe High School, 1999a; Lankers, 1998; Mt. Edgecumbe High School, 1999b; Untch, [s.a.]; Kalamazoo College, 1997a). ▪ Membership to clubs and organisations (Mt. Edgecumbe High School, 1999b). ▪ Other aspects regarding student and social life (Illinois State University, 1998b; Garnhart, 1996; Untch, [s.a.]; Kalamazoo College, 1997a).

3.2.2 Analysis of the purpose of developing an electronic professional developmental portfolio

The South African Council for Educators (SACE) has been established to act as the guardian of the professionalism of teachers. To be able to practice as a teacher in South Africa, registration to the SACE is compulsory. SACE has also set standards and criteria which teachers have to comply with in order to register and be licensed, as well as a code of conduct which they have to adhere to (see Appendix A on the CD ROM for the complete Code of Conduct of the SACE). Teachers who are licensed, have to renew their licenses regularly (every three years). Specific professional requirements will have to be fulfilled in order to qualify for re-licensing e.g. "... *successful completion of in-service programmes, performance appraisal for developmental purposes and demonstrated compliance with the Code of Conduct.*" (Department of Education, 1997b:43). However, logistical problems may arise as educators are expected to submit lengthy paper-based evidence that they qualify for re-licensing. It was suggested that the SACE be linked to the SAQA database to enable them to have access to a list of qualifications obtained by an educator. Another option of obtaining this information could be to make use of electronic portfolios. In an electronic

portfolio information regarding the educator's development will also be included. There are many advantages of using electronic portfolios although it requires a very high level of computer skills as well as many time consuming activities.

Computer-assisted Aids for Education (RMX 880) is one of the compulsory modules of the MEd (Computer-assisted Education (CAE)), MEd (Information Technology (IT)) and MA (Information Science (IS)) qualifications of the University of Pretoria. Students registered for any one of these qualifications are mostly educators who will have to comply with the licensing standards as set by the SACE. For this reason the presenter of this module for 1999 decided to use portfolio assessment to equip the learners with a tool that they can use to demonstrate to the SACE that they comply with the set requirements. The development of the electronic portfolio in this module (Computer-assisted Aids for Education) forms an integral part of the module. All the other assignments for this module will be included in the electronic developmental portfolio.

3.2.3 Analysis of the learners involved in the research

The composition of the target population is an important factor that should be taken into consideration when planning the design, development and implementation of any programme. Assumptions regarding the composition of the group of learners, were based on the registration of previous years for the MEd (CAE) qualification. According to the presenter the level of computer skills of the learners varied considerably. They were all educators, but their levels of computer skills were in most cases, not very advanced. Most of the learners were able to use a word processing programme, but they did not have any experience regarding the world wide web or other computer applications. For this reason it was decided to develop a tool in a word processing programme and not to use a web based tool or html (hypertext markup language) application.

3.3 The design phase

The main objective of the design phase was to design a set of *templates* that could be used by learners to construct an electronic professional developmental portfolio. Based on the assumption that the target group of learners will all be able to use a word processing programme, a suitable word processing programme for developing the set of templates, had to be selected. It was decided to use Microsoft Word 97 because the learners in this module

(RMX 880) had to create a series of newsletters using Microsoft Word 97 and this is also the only word processing programme supported by the University of Pretoria. Keeping in mind that regarding word processing programmes, the level of computer skills of learners may vary, it was decided to develop guides or manuals to accompany the templates, to provide the learners with on-line help regarding the use of the templates. Because the creation of the electronic portfolio is an integral part of the module, an assignment that requires the learners to develop an electronic portfolio had to be designed. It was also important that the learners received some theoretical background regarding electronic portfolios and portfolio assessment and for this reason a number of journal articles and web pages as references had to be included on the CD ROM containing all the study material. Each learner's electronic portfolio needs to be assessed after completion and for this purpose assessment criteria and an assessment instrument also had to be designed. The design specifications for the Microsoft Word 97 portfolio templates, the on-line guides, the assignment, the presentation of the articles, and the assessment instrument will be addressed in detail in Paragraphs 3.3.1 – 3.3.5.

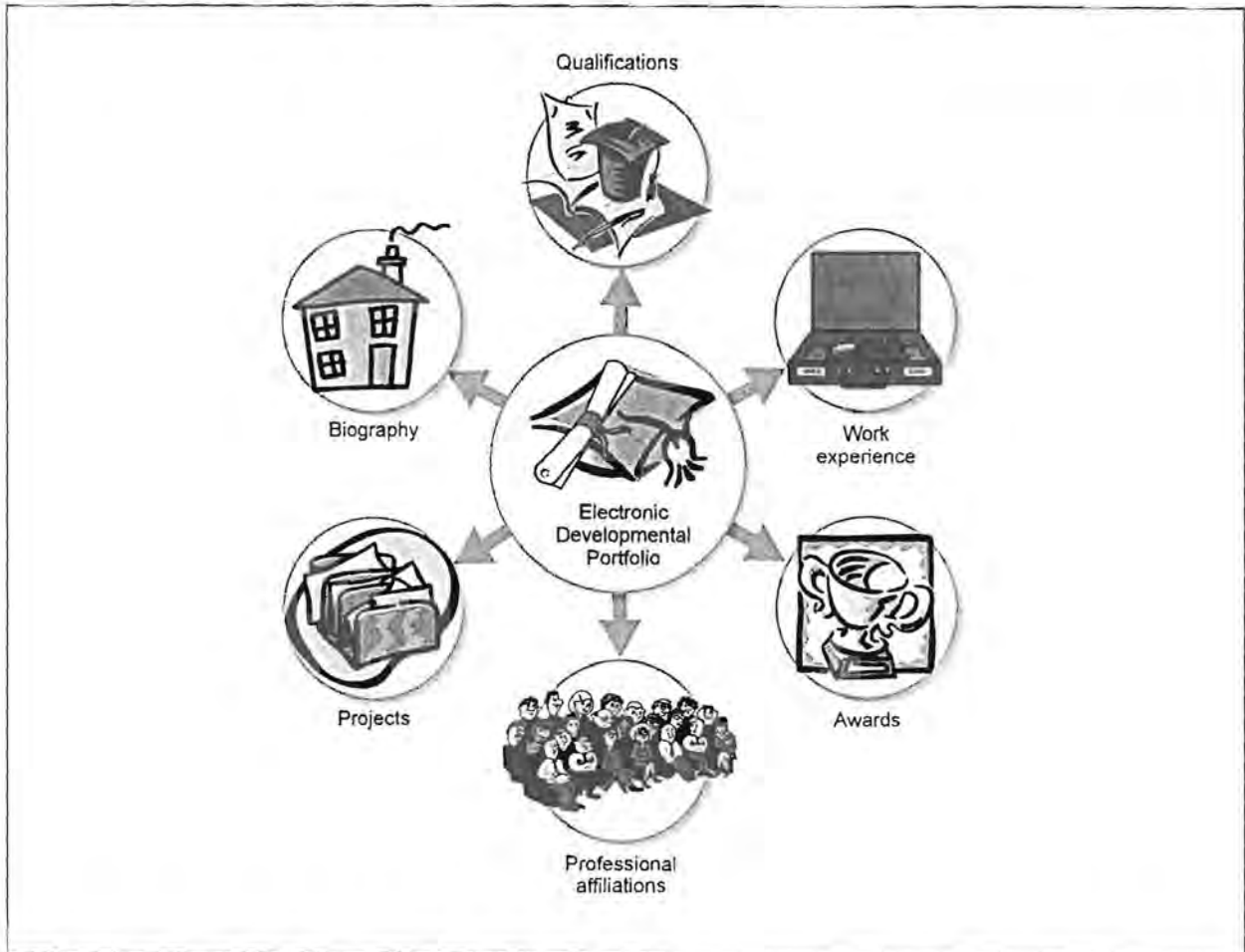
3.3.1 Design specifications for the Microsoft Word 97 portfolio templates

Microsoft Word 97 can be used to develop esthetically pleasing documents, and in this case, templates. Once edited by the learner, the Microsoft Word 97 files will be converted to portable display format (pdf) using Adobe Acrobat Exchange. The same programme will be used to insert and activate hyperlinks between the different portfolio pages. Setting design specifications for the Microsoft Word 97 portfolio templates included designing the components of the electronic developmental portfolio as well as the look and feel.

3.3.1.1 Designing the components of the Microsoft Word 97 portfolio templates

Six components were identified to be essential components of the electronic professional developmental portfolio. These six components are graphically represented in Figure 3.2.

Figure 3.2: The six essential components of the electronic professional developmental portfolio



The design elements applicable to each component are indicated in Table 3.2.

Table 3.2: Design elements regarding the components of the professional developmental portfolio


Component	Description
<p data-bbox="232 1513 380 1543">Biography</p> 	<p data-bbox="657 1513 1437 1594">This page will contain an area where the learners can insert biographical data, including:</p> <ul style="list-style-type: none"> <li data-bbox="657 1616 846 1647">▪ Full name; <li data-bbox="657 1667 1013 1698">▪ Residential information; <li data-bbox="657 1718 951 1749">▪ Postal information; <li data-bbox="657 1769 1040 1800">▪ Occupational information; <li data-bbox="657 1820 997 1851">▪ Recreational activities. <p data-bbox="657 1871 1016 1902">The learners will be able to:</p> <ul style="list-style-type: none"> <li data-bbox="657 1922 1170 1953">▪ Insert their own photographs/clipart;

Table 3.2: Design elements regarding the components of the professional developmental portfolio (continued)




Component	Description
Biography (continued)	<ul style="list-style-type: none"> ▪ Include any other applicable information; ▪ Insert links to other pages, web pages or applicable documents.
Qualifications 	<p>This page will contain an area where the learners can insert the different qualifications obtained under the following headings:</p> <ul style="list-style-type: none"> ▪ Name of the qualification; ▪ Name of the institution; ▪ Year; ▪ Subjects; ▪ Links to applicable pages/information.
Work experience 	<p>This page will contain an area where learners can insert a summary of the their different work experiences under the following headings:</p> <ul style="list-style-type: none"> ▪ Name of the organisation; ▪ Job description; ▪ Duration/period; ▪ Responsibilities; ▪ Reference(s); ▪ Links to applicable pages/information.
Projects 	<p>This page will contain an area where learners can insert information regarding any projects that they were involved with, including:</p> <ul style="list-style-type: none"> ▪ Papers presented at conferences including the following information: <ul style="list-style-type: none"> - Title of the paper presented; - Author(s); - Year; - City; - Conference/workshop; - An abstract of the paper; - Other links to applicable pages/information.

Table 3.2: Design elements regarding the components of the professional developmental portfolio (continued)




Component	Description
<p data-bbox="224 296 513 327">Projects (continued)</p> 	<ul style="list-style-type: none"> <li data-bbox="657 296 1377 378">▪ Articles published in periodicals/magazines/journals including the following information: <ul style="list-style-type: none"> <li data-bbox="699 400 1175 431">- Title of the articles published; <li data-bbox="699 453 927 484">- Author(s); <li data-bbox="699 506 867 537">- Year; <li data-bbox="699 559 1040 590">- Periodical/Journal; <li data-bbox="699 612 1122 643">- An abstract of the article; <li data-bbox="699 665 1360 696">- Other links to applicable pages/information. <li data-bbox="657 718 1349 800">▪ Research reports compiled including the following information: <ul style="list-style-type: none"> <li data-bbox="699 822 1149 853">- Title of the report compiled; <li data-bbox="699 875 927 906">- Author(s); <li data-bbox="699 929 867 960">- Year; <li data-bbox="699 982 878 1013">- Place; <li data-bbox="699 1035 927 1066">- Publisher; <li data-bbox="699 1088 1122 1119">- An abstract of the report; <li data-bbox="699 1141 1360 1172">- Other links to applicable pages/information. <li data-bbox="657 1194 1289 1276">▪ Technology developed including the following information: <ul style="list-style-type: none"> <li data-bbox="699 1298 1052 1329">- Title of the product; <li data-bbox="699 1351 1240 1382">- Goal of the technology developed; <li data-bbox="699 1404 987 1435">- Self-reflection; <li data-bbox="699 1457 1040 1488">- Link to the product <li data-bbox="657 1510 1370 1592">▪ Community service rendered including the following information: <ul style="list-style-type: none"> <li data-bbox="699 1614 1321 1645">- Descriptive title for the service rendered; <li data-bbox="699 1667 1175 1698">- Goal of the service rendered; <li data-bbox="699 1720 1349 1751">- Community where the service is rendered; <li data-bbox="699 1774 1003 1804">- Type of activity; <li data-bbox="699 1827 987 1858">- Self-reflection.

Table 3.2: Design elements regarding the components of the professional developmental portfolio (continued)

Component	Description
<p>Professional affiliation</p> 	<p>This page will contain an area where learners can insert a summary of their professional affiliations under the following headings:</p> <ul style="list-style-type: none"> ▪ Name of the organisation; ▪ Position; ▪ Duration/period; ▪ Goal/objectives; ▪ Links to applicable pages/information.
<p>Awards</p> 	<p>This page will contain an area where learners can insert a summary of awards/bursaries awarded to them under the following headings:</p> <ul style="list-style-type: none"> ▪ Name of the award; ▪ Institution; ▪ Year; ▪ Criteria; ▪ Links to applicable pages/information.

3.3.1.2 Designing the *look and feel* of the Microsoft Word 97 portfolio templates

An applicable look and feel will have to be established in order to create continuity between the different pages of the portfolio. It is important that the designed look and feel is meant to be an example for the learners – they could use it as is, but it must also allow them to change the pages according to their own personal preferences.

The look and feel of any programme refer to the standard "*look*" set out in the design phase. Aspects like the font size, type, colour and layout of text and the use of graphics and colour will be addressed. The design specifications for the look and feel of the Microsoft Word 97 portfolio templates are presented in Table 3.3.

Table 3.3: Design specifications for the look and feel of the Microsoft Word 97 portfolio templates

Design element	Description
Text and text layout	<ul style="list-style-type: none"> ▪ A sans serif font type (Arial Narrow) will be used because it is aesthetically pleasing and very legible. ▪ The font type and size, position of headings, labels and descriptive information will be used consistently. ▪ Tables will be used with dedicated positions for headings and descriptive text. ▪ Each page will contain a header and a footer, which will serve as navigation bars.
Colour	<ul style="list-style-type: none"> ▪ Colour will be used in the header (navigation bar) and in the graphics. ▪ Different shades of blue will be used for the different navigation buttons – this use of colour will be functional, the lighter blue buttons will be clicked to move from one page to another and the darker blue button will indicate the page being viewed. ▪ Text on the buttons will be white for legibility. ▪ The blue and white border on top of the page are purely for aesthetic purposes.
Graphics	<ul style="list-style-type: none"> ▪ Graphics will be used to create an informal look. ▪ On top of each page the cap and roll (symbols of learning and qualifications) will be displayed. ▪ Each page will display an appropriate, descriptive graphic next to the heading. ▪ The biography page will display appropriate pictures for every section of the page e.g. a post box for the postal address.
Navigation bars	<ul style="list-style-type: none"> ▪ The navigation bars will be contained in the header and footer of each page, to ease editing of the templates by the learners. ▪ The navigation tools will appear at the top as well as the bottom of the page for easy navigation by the user. ▪ The header will consist of six navigation buttons.

Table 3.3: Design specifications for the look and feel of the Microsoft Word 97 portfolio templates (continued)

Design element	Description
Navigation bars (continued)	<ul style="list-style-type: none"> ▪ Different shades of blue will be used for the different navigation buttons as described under <i>Colour</i>. ▪ The footer will consist of six navigation text buttons, the text within a frame will indicate the active page.

3.3.2 Design specifications for the on-line guides accompanying the Microsoft Word 97 portfolio templates

Although it is assumed that all the learners will be able to use a word processing programme, the learners will be provided with assistance regarding the use of the templates. An on line help function is perceived as a workable solution and such help pages or guides will be developed. It will be available either on-screen or a printed copy can be made. The design principles regarding the components of the on-line guides as well as the look and feel is described in the following paragraph.

3.3.2.1 Designing the components of the on-line guides

An on-line guide has to be developed for each individual template page. Depending on the content of the template page, a suitable on-line guide page has to be created. Design principles regarding the components included in the on-line guides had to be set and are presented in Table 3.4.

Table 3.4: Design specifications for the components in the on-line guides

Component	Description
Purpose of the specific page	The purpose and information contained on that specific page will be described.
How to use the specific page	A description of how to use the specific page and all its components of will be provided.

**Table 3.4: Design specifications for the components in the on-line guides
(continued)**

Component	Description
How to enter data to the specific page	The difference between the label and content parts of the information elements on the pages will be described. Step-by-step instructions regarding the entering of data will be provided.
How to insert additional rows into tables	Step-by-step instructions regarding the inserting of additional rows into the tables will be provided.
How to delete rows from tables	Step-by-step instructions regarding the deleting of rows from the tables will be provided.
How to insert additional tables	Step-by-step instructions regarding the inserting of additional tables on the page will be provided.
How to enter previous and next page bars	The navigation component of the electronic portfolio is very important and therefore step-by-step instructions regarding the inserting of navigation bars on the pages will be provided.
How to save the page	The templates will be developed as template files (*.dot). It is important that the learners will save it as Microsoft Word 97 files (*.doc) and therefore instructions regarding the saving of the page as a Microsoft Word 97 file will be provided.
Additional information	Some pages need additional information which will be supplied for that specific page for example the biography page will need more information regarding the inserting of the learner's photograph.

3.3.2.2 Designing the *look and feel* of the on-line guides

An applicable "look and feel" has to be established for the on-line guides. Each portfolio template page will have an on-line guide indicating to the learner exactly how to use that page and this on-line guide will be accessible from the template page by clicking on a "Guide" button on the tool bar. The same graphic that will be used on the template page, will be used on the accompanying on-line guide to establish continuity. The design specifications for the look and feel of the on-line guides are presented in Table 3.5.


Table 3.5: Design specifications for the look and feel of the on-line guides

Design element	Description
Text and text layout	<ul style="list-style-type: none"> ▪ A sans serif font type (Arial Narrow) will be used to ease legibility. ▪ The font type and size, position of headings, labels and descriptive information will be used consistently. ▪ Each page will contain a header and a footer that will serve as navigation bars to scroll the document.
Graphics	<ul style="list-style-type: none"> ▪ The same clipart graphic that will be used on the portfolio template page, will be used on the on-line Guide page to indicate to the student to which template page the specific on-line guide is referring.

3.3.3 Design specifications for the assignment regarding the compilation of an electronic portfolio

The development of an electronic portfolio is an integral part of the RMX module and not just an add-on. The assignment pertaining to the compilation of the electronic portfolio will be in exactly the same format as the other assignments for this module (RMX 880). Assignment 1, as an example of the format of the assignments, is presented in Figure 3.3.

Figure 3.3: Assignment 1



Landulani Secondary School

PO Box 16540
Landulani
6167

Telephone: 045 567-9684
Fax: 045 567-9685

Chairperson: Inservice Education and Training Committee
Landulani Secondary School

27 January 1999

Dear Colleague

INSERVICE: NEW EDUCATION SYSTEM

On 26 October 1998 the school governing body decided that the staff should be trained in OBE in South Africa, as part of the inservice training programme. It was decided unanimously that a series of newsletters should be developed which can be used as information resources during the training sessions.

Would you be so kind to develop a series of newsletters which will address the following topics:

- ◆ Transformational OBE
- ◆ Transformational OBE and the learner
- ◆ Transformational OBE and the educator
- ◆ Transformational OBE and the School
- ◆ Transformational OBE, the parent and the community
- ◆ Transformational OBE and School governing bodies

You are requested to use a word processor (preferably MS Word 97).

The series of newsletters should be submitted to the school governing body for discussion and evaluation.

Yours sincerely

Prof JG Knoetze
Chairperson: School Governing Body

3.3.4 Design specifications for the presentation of the articles

For most learners portfolio development and specifically electronic portfolio development is a new concept. For this reason it is important that the learners be provided with journal articles, web pages and other sources providing more information regarding the development and use of electronic developmental portfolios. These resources will be provided on the RMX 880 CD ROM which will contain all the study material. Uniform Resource Locators

(URL's) for the applicable web pages will be provided, but the complete journal articles will be provided on the CD ROM. Although no changes regarding the layout or content of the articles are permitted, the processes and procedures to present the articles in an electronic format to the learners as well as navigation of on-line articles had to be designed. The design specifications for the presentation of the articles are presented in Table 3.6.

Table 3.6: Design specifications for the presentation of the articles

Design element	Description
Content	<ul style="list-style-type: none"> ▪ No changes regarding the layout or appearance of the articles are allowed in terms of copyright legislation.
Navigation	<ul style="list-style-type: none"> ▪ Each page of each article will contain a header and a footer that will serve as navigation bars to ease scrolling of the document. ▪ The following navigation buttons will be present on each page: <ul style="list-style-type: none"> – Back to assignments – Back to assignment # (indicating the assignment number) – Back to resources – Next page – Previous page

3.3.5 Design specifications for the assessment instrument

Van Niekerk (1998) set some guidelines for assessment of portfolios based on the demonstration of specific abilities by the learner using a portfolio. These guidelines cover a very wide range of applicable competencies and were adapted for an electronic developmental portfolio that the learners have to develop in RMX 880. The assessment criteria, on which the assessment instrument will be based, is presented in Table 3.7. The assessment instrument is presented in Table 3.13.

Table 3.7: Assessment criteria for the assessment instrument (Adapted from Van Niekerk, 1998)

Ability	Description
The ability to communicate content effectively	<ul style="list-style-type: none"> ▪ Structure work logically: <ul style="list-style-type: none"> – Select an appropriate framework for the assignment; – A logical flow of ideas; ▪ Use academically acceptable language, regarding: <ul style="list-style-type: none"> – Grammar; – Avoid slang or informal language; – Provide additional supporting details, examples or information to prevent confusion; – Avoid subjective statements.
Mechanical ability	<ul style="list-style-type: none"> ▪ Format the content by the correct and consistent use of: <ul style="list-style-type: none"> – Table of contents; – Titles/headings; – Numbering/bullets; – Emphasising text e.g. underlining, italics, bold, colour; – Upper and lower case; – Navigation.
Creative ability	<ul style="list-style-type: none"> ▪ Come up with new ideas and insights.
The ability to make experience an integral part of learning	<ul style="list-style-type: none"> ▪ Focus on the process of learning as well as the products of learning by including reflective items which indicate awareness of: <ul style="list-style-type: none"> – The value of the learning process and knowledge gained.
The ability to reflect on prior learning	<ul style="list-style-type: none"> ▪ Make the link between prior knowledge and the newly acquired knowledge: <ul style="list-style-type: none"> – Including items which indicate a building on existing or prior knowledge.
The ability to reflect on strengths and weaknesses as a learner	<ul style="list-style-type: none"> ▪ Recognise strengths and weaknesses and reflect on these: <ul style="list-style-type: none"> – Including reflective items to identify strengths and weaknesses regarding learning.

Table 3.7: Assessment criteria for the assessment instrument (Adapted from Van Niekerk, 1998) (continued)

Ability	Description
The ability to keep track of learning	<ul style="list-style-type: none"> ▪ Keep track of learning: <ul style="list-style-type: none"> – Include items of reflection and revision on a continuous basis.
The ability to assume responsibility for learning	<ul style="list-style-type: none"> ▪ Demonstrate a willingness to assume responsibility for learning: <ul style="list-style-type: none"> – Include items which indicate a willingness to do more than expected.
The willingness to take risks while developing creative solutions	<ul style="list-style-type: none"> ▪ Take risks in the search for solutions: <ul style="list-style-type: none"> – Include items which indicate a boldness to explore, take chances and to come up with unique solutions to problems.
The ability to work meaningfully with concepts and content	<ul style="list-style-type: none"> ▪ Interpret, analyse apply, compare, distinguish between and critically evaluate concepts and content: <ul style="list-style-type: none"> – Include items such as summaries and reflection on the meaning of concepts and critical evaluation.
The ability to assess and value own learning	<ul style="list-style-type: none"> ▪ Assess own learning in terms of quality of learning: <ul style="list-style-type: none"> – Complete and include self assessment activities.
The ability to make practical applications of theory	<ul style="list-style-type: none"> ▪ Use the theory in practice: <ul style="list-style-type: none"> – Include items which indicate an ability to apply what was learned in own life world.

3.4 The development phase



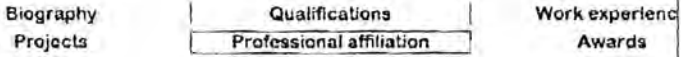

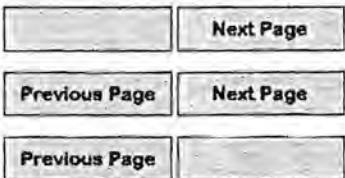
During the development phase all the design specifications that were presented in Paragraph 3.3 will be implemented. These design specifications refer to:

- The Microsoft Word 97 portfolio templates,
- The on-line guides accompanying these templates;
- An assignment in which the development of the electronic portfolio is set out;
- Articles providing information regarding electronic portfolios;
- The assessment instrument.

3.4.1 Development of the Microsoft Word 97 portfolio templates

The Microsoft Word 97 portfolio templates were developed according to the design specifications in Tables 3.2 and 3.3. Before the individual pages could be developed certain components that have to be present on each page, had to be developed. These components are described and a graphic representation thereof is presented in Table 3.8.

Table 3.8: Development of the Microsoft Word 97 portfolio templates

Description of component	Graphic
A suitable heading for the electronic professional developmental portfolio is selected and inserted.	<p style="text-align: center;">Professional Developmental Portfolio</p> 
The applicable header, containing the navigation buttons as well as the decorative border (the same one used by the developers of the RMX 880 module) are on each page.	
The applicable footer, containing the navigation buttons is inserted on each page.	
A tool bar is inserted on every template page, allowing learners to access the on-line guide and insert the top and bottom navigation bars on their portfolio pages. If <i>View Guide</i> option is selected, the on-line guides (see Table 3.10) can be viewed.	
If <i>Insert top bar</i> or <i>Insert bottom bar</i> is selected, the learner have an option of three different navigational bars to insert in the specific page. The navigation bars are automatically inserted in the correct position on the top or the bottom of the specified page.	

Appropriate graphics were selected for each template page. Tables were created to enter the relevant information on each page – this was done to ensure that the labels and content the learners enter, will always be in the applicable positions.

The files were saved as Microsoft Word 97 template files (*.dot) to ensure that learners can use it as a template but not overwrite it while editing. They have to save it as a Microsoft Word 97 file (*.doc).

The Microsoft Word 97 portfolio templates are presented in Appendix B on the CD ROM. A description of the templates and a graphic representation thereof are presented in Table 3.9.

Table 3.9: The Microsoft Word 97 portfolio templates



Description of the template pages	Page
<p>The biographical information is presented on two separate pages. On page one there is an area for a photograph, full name, ID number, SACE registration number as well as residential and postal addresses.</p>	
<p>On page two of the Biography template there are areas for occupational information (organisation, address, telephone and fax numbers and e-mail address) and also for recreational activities e.g. sports, hobbies and others.</p>	

Table 3.9: The Microsoft Word 97 portfolio templates (continued)





Description of the template pages	Page
<p>The qualifications template provides areas to include information regarding qualifications obtained chronologically from the most recent to the first qualification obtained. Information regarding the institution where the qualification was obtained, can also be inserted.</p>	
<p>The work experience template provides areas to insert information regarding the current as well as previous occupations of the user. Information pertaining to the organisation, job description, duration, responsibilities and references are presented. Provision for inserting links to applicable web pages has been made.</p>	
<p>This page serves as a menu of all the projects that the user has completed. Provision is made for different types of projects: papers presented, articles published, research reports compiled, technology developed and community service rendered. More types of projects could be added with ease.</p>	
<p>The paper menu page serves as a menu page for all the papers presented at conferences and workshops. Links to the descriptions of the different papers are inserted here.</p>	

Table 3.9: The Microsoft Word 97 portfolio templates (continued)








Description of the template pages	Page
<p>The paper description page serves as a summary of a specific paper. This page contains information regarding the paper: the title, author(s), year, city where presented, an abstract of the paper and a link to the complete paper.</p>	
<p>The article menu page serves as a menu page for all the articles published in journals and other publications. Links to the descriptions of the different articles are inserted here.</p>	
<p>The article description page serves as a summary of a specific article. This page contains information regarding the article: the title, author(s), year, publication, an abstract of the paper and a link to the complete article.</p>	
<p>The report menu page serves as a menu page for all the research reports compiled by the user. Links to the descriptions of the different reports are inserted here.</p>	

Table 3.9: The Microsoft Word 97 portfolio templates (continued)

Description of the template pages	Page
<p>The research report description page serves as a summary of a specific research report. This page contains information regarding the report: the title, author(s), year, place, an abstract of the paper and a link to the complete research report.</p>	
<p>The technology menu page serves as a menu page for all the technology developed by the user. Links to the descriptions of the different technologies are inserted here.</p>	
<p>The technology description page serves as a summary of specific products developed. This page contains information regarding the product: the title, goal, self-reflection and a link to the complete product. In this case, Assignments 1, 2 and 3 of RMX 880 will be included on this page.</p>	
<p>The community service menu page serves as a menu page for all the community projects that the user is/was involved with. Links to the descriptions of the different community projects are inserted here.</p>	

Table 3.9: The Microsoft Word 97 portfolio templates (continued)

Description of the template pages	Page
<p>The community service description page serves as a summary of a specific community service project. This page contains information regarding the project: the title, goal, community, type of activity and self-reflection.</p>	
<p>The professional affiliations pages provide areas to insert the name of the organisation the user is affiliated with/to, position, duration, goal and a link to a relevant pages.</p>	
<p>The awards page provides areas to insert information regarding any awards or presentations received by the learner – the name of the award, the institution presenting it, the year, criteria and an applicable link.</p>	

3.4.2 Development of the on-line guides

The on-line guides for the Microsoft Word 97 portfolio templates were developed according to the design specifications in Tables 3.4 and 3.5. The on-line guides were developed in Microsoft Word 97 and all the applicable information and graphics were inserted on each page. Applicable navigation buttons was inserted at the top and the bottom of each page.

Adobe Acrobat Exchange was used to convert the on-line guides files (developed in Microsoft Word 97) to portable display format (*.pdf) and to activate the navigation links to

enable the learner to page through the documents. The files were accessible from the template pages and the learners needed Adobe Acrobat Reader to access the documents when they click on the *View Guide* toolbar. Adobe Acrobat Reader allows the learners to read the document on the screen or to print it. The on-line guides are presented in Appendix C on the CD ROM.

A description of the on-line guides and a graphic representation of the first page of each on-line guide are presented in Table 3.10.

Table 3.10: The on-line guides accompanying the Microsoft Word 97 portfolio templates

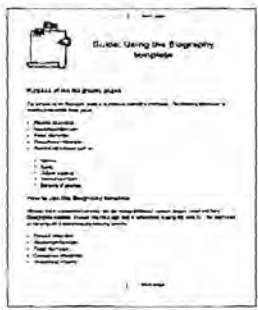


Description of the on-line guide	Page
<p>This is the first page of the on-line guide to the biography template. This on-line guide consists of four pages and contains the following information: purpose of the biography pages and how to use it. Other information contained in this document includes: how to enter data, how to insert a photograph, how to insert additional rows in tables, how to delete rows in tables, how to enter previous page/next page bars and how to save the biography page.</p>	
<p>This is the first page of the on-line guide to the qualifications template. This on-line guide consists of three pages and contains the following information: purpose of the qualification page(s), how to use it and how to enter data. Other information contained in this document includes: how to insert additional rows in tables, how to delete rows in tables, how to insert additional tables; how to enter previous page/next page bars and how to save the qualifications page.</p>	
<p>This is the first page of the on-line guide to the work experience template. This on-line guide consists of three pages and contains the following information: purpose of the work experience page(s), how to use it and how to enter data. Other information contained in this document includes: how to insert additional rows in tables, how to delete rows in tables, how to insert additional tables; how to enter previous page/next page bars and how to save the work experience page.</p>	

Table 3.10: The on-line guides accompanying the Microsoft Word 97 portfolio templates (continued)





Description of the on-line guide	Page
<p>This is the first page of the on-line guide to the projects template. This on-line guide consists of two pages and contains the following information: purpose of the projects page(s), how to use it and how to insert additional rows in a table. Other information contained in this document includes: how to delete rows in tables, how to insert additional tables, how to enter previous page/next page bars and how to save the projects page.</p>	
<p>This is the first page of the on-line guide to the papers menu template. This on-line guide consists of two pages and contains the following information: purpose of the papers menu page, how to use it, how to insert additional rows in tables and how to delete rows in tables. Other information contained in this document includes: how to enter previous page/next page bars and how to save the papers menu page.</p>	
<p>This is the first page of the on-line guide to the papers description template. This on-line guide consists of three pages and contains the following information: purpose of the papers description page(s), how to use it and how to enter data. Other information contained in this document includes: how to insert additional rows in tables, how to delete rows in tables, how to insert additional tables; how to enter previous page/next page bars and how to save the papers description page.</p>	
<p>This is the first page of the on-line guide to the articles menu template. This on-line guide consists of two pages and contains the following information: purpose of the articles menu page, how to use it, how to insert additional rows in the table and how to delete rows in tables. Other information contained in this document includes: how to enter previous page/next page bars and how to save the articles menu page.</p>	

Table 3.10: The on-line guides accompanying the Microsoft Word 97 portfolio templates (continued)



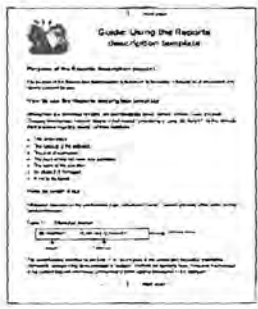
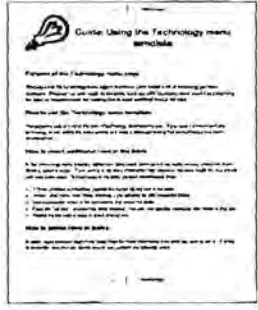

Description of the on-line guide	Page
<p>This is the first page of the on-line guide to the articles description template. This on-line guide consists of three pages and contains the following information: purpose of the articles description page(s), how to use it and how to enter data. Other information contained in this document includes: how to insert additional rows in tables, how to delete rows in tables, how to insert additional tables; how to enter previous page/next page bars and how to save the articles description page.</p>	
<p>This is the first page of the on-line guide to the reports menu template. This on-line guide consists of two pages and contains the following information: purpose of the reports menu page, how to use it, how to insert additional rows in the table and how to delete rows in tables. Other information contained in this document includes: how to enter previous page/next page bars and how to save the reports menu page.</p>	
<p>This is the first page of the on-line guide to the reports description template. This on-line guide consists of three pages and contains the following information: purpose of the reports description page(s), how to use it and how to enter data. Other information contained in this document includes: how to insert additional rows in tables, how to delete rows in tables, how to insert additional tables, how to enter previous page/next page bars and how to save the reports description page.</p>	
<p>This is the first page of the on-line guide to the technology menu template. This on-line guide consists of two pages and contains the following information: purpose of the technology menu page, how to use it, how to insert additional rows in the table and how to delete rows in tables. Other information contained in this document includes: how to enter previous page/next page bars and how to save the technology menu page.</p>	

Table 3.10: The on-line guides accompanying the Microsoft Word 97 portfolio templates (continued)

Description of the on-line guide	Page
<p>This is the first page of the on-line guide to the technology description template. This on-line guide consists of three pages and contains the following information: purpose of the technology description page(s), how to use it and how to enter data. Other information contained in this document includes: how to insert additional rows in tables, how to delete rows in tables, how to insert additional tables; how to enter previous page/next page bars and how to save the technology description page.</p>	
<p>This is the first page of the on-line guide to the community service menu template. This on-line guide consists of two pages and contains the following information: purpose of the community service menu page, how to use it, how to insert additional rows in the table and how to delete rows in tables. Other information contained in this document includes: how to enter previous page/next page bars and how to save the community service menu page.</p>	
<p>This is the first page of the on-line guide to the community service description template. This on-line guide consists of three pages and contains the following information: purpose of the community service description page(s), how to use it and how to enter data. Other information contained in this document includes: how to insert additional rows in tables, how to delete rows in tables, how to insert additional tables; how to enter previous page/next page bars and how to save the community service description page.</p>	
<p>This is the first page of the on-line guide to the professional affiliations template. This on-line guide consists of three pages and contains the following information: purpose of the professional affiliations page(s), how to use it and how to enter data. Other information contained in this document includes: how to insert additional rows in tables, how to delete rows in tables, how to insert additional tables; how to enter previous page/next page bars and how to save the professional affiliations page.</p>	

Table 3.10: The on-line guides accompanying the Microsoft Word 97 portfolio templates (continued)

Description of the on-line guide	Page
<p>This is the first page of the on-line guide to the awards template. This on-line guide consists of three pages and contains the following information: purpose of the awards page(s), how to use it and how to enter data. Other information contained in this document includes: how to insert additional rows in tables, how to delete rows in tables, how to insert additional tables; how to enter previous page/next page bars and how to save the awards page.</p>	

3.4.3 Development of the assignment pertaining to the development of the electronic portfolio

The assignment was developed according to the design specifications in Table 3.6. It was presented as a letter to the learners enrolled for the module RMX 880, from the SACE to remind them that they should apply for re-registration and renewal of their SACE license. A fictitious letter head for the SACE was created.

The letter contains the following information:

- A very short description of the functions of the SACE;
- A reminder that registration is compulsory and should be renewed every three years;
- The importance of adhering to the criteria and standards of the SACE in order to register;
- The existence of the Code of conduct all educators should adhere to;
- Examples of what the educator should present to the SACE in order to be re-registered and issued with a license;
- A notification to the educator that he/her license should be renewed;
- A request to the educator to send the applicable registration forms, electronic portfolio and registration fees to the SACE before a specific date.

The letter is presented in Figure 3.4.

Figure 3.4: Assignment pertaining to the development of the electronic portfolio



3.4.4 Development of the presentation of the articles

The presentation of the journal articles in an electronic format was developed according to the design specifications in Table 3.6. The text of each article was scanned and inserted in Microsoft Word 97. The graphics of each article were scanned separately and inserted in the Microsoft Word 97 document containing the text. Each article document was edited and the final product was an exact replica of the article as it appeared in the journal. This was done

not to violate copyright laws. Applicable navigation text was inserted at the top and the bottom of each page in order to ease paging through the articles.

Adobe Acrobat Exchange was used to convert the files to portable display format (pdf) and insert the links to the navigation text. These *.pdf files were accessible on the RMX 880 CD ROM. The learners needed Adobe Acrobat Reader to view and/or print the articles. The references to the articles and the first page of each article which were available to the learners are presented in Table 3.11.

Table 3.11: The Journal articles






Reference	Article
<p>Barret, H.C. 1998. Strategic Questions. What to Consider When Planning for Electronic Portfolios. Learning & Leading with Technology, 26(2), pp 6-13.</p>	
<p>Herbert, E.A. 1998. Lessons Learned About Student Portfolios. PHI DELTA KAPPAN, 79(8), pp 583-585.</p>	
<p>Hurst, B., Wilson, C. & Cramer, G. 1998. Professional Teaching Portfolios. Tools for Reflection, Growth, And Advancement. PHI DELTA KAPPAN, 79(8), pp 578-582.</p>	

Table 3.11: The Journal articles (continued)

Reference	Article
Tillema, H.H. 1998. Design and Validity of a Portfolio Instrument for Professional Training. <i>Studies in Educational Evaluation</i> , 24(3), pp 263-265, 275-276.	
Wiedmer, T.L. 1998. Digital Portfolios. Capturing and Demonstrating Skills and Levels of Performance. <i>PHI DELTA KAPPAN</i> , 79(8), pp 586-589.	

These articles were not the only resources regarding professional electronic portfolios that were available to the learners. The Uniform Resource Locators (URL's) of web pages containing useful information regarding electronic portfolio development, were also provided on the RMX 880 CD ROM and are presented in Table 3.12.

Table 3.12: The Uniform Resource Locators (URL's) of applicable resources regarding electronic portfolio development

Description	URL
Illinois State University. 1998b. Student Portfolio: System News.	http://www.acc.ilstu.edu/portnews.htm
Kalamazoo College. 1997d. Frequently Asked Questions About the Development and Implementation of the Kalamazoo Portfolio.	http://www.kzoo.edu/pfolio/FAQ.html
Kalamazoo College. 1997b. The Kalamazoo Portfolio: Reflections. Connections. Life.	http://www.kzoo.edu/pfolio/description.html
UTC Arizona. 1998. The Teaching Portfolio.	http://www.utc.arizona.edu/tact2-2.html

3.4.5 Development of the assessment instrument

The assessment criteria as indicated in Table 3.7 were used to develop the assessment instrument that will be used to assess the electronic developmental portfolios created by the learners. The mark allocation is indicated in the instrument which is presented in Table 3.13.

Table 3.13: The assessment instrument of the professional electronic developmental portfolio (Adapted from Van Niekerk, 1998)

Ability	Description	Very high 5	High 4	Medium 3	Low 2	Very low 1	Not shown 0
The ability to communicate content effectively	Structure work logically:						
	<ul style="list-style-type: none"> Select an appropriate framework for the assignment; a logical flow of ideas; 						
	Use academically acceptable language:						
	<ul style="list-style-type: none"> grammar; avoid slang or informal language; 						
	<ul style="list-style-type: none"> provide additional supporting details, examples or information if something may be confusing or not clear; avoid subjective statements. 						
	Average:						
Mechanical ability	Format the content by the correct and consistent use of:						
	<ul style="list-style-type: none"> table of contents; titles/headings; 						
	<ul style="list-style-type: none"> numbering/bullets; emphasizing text e.g. underlining, italics, bold, colour; upper and lower case; 						
	<ul style="list-style-type: none"> navigation. 						
	Average:						

Table 3.13: The assessment instrument of the professional electronic developmental portfolio (Adapted from Van Niekerk, 1998) (continued)

Ability	Description	Very high	High	Medium	Low	Very low	Not shown
		5	4	3	2	1	0
Creative ability	<ul style="list-style-type: none"> Come up with new ideas and insights. 						
Average:							
The ability to make experience an integral part of learning	Focus on the process of learning as well as the products of learning by including reflective items which indicate awareness of: <ul style="list-style-type: none"> the value of the learning process and knowledge gained. 						
The ability to reflect on prior learning	Make the link between prior knowledge and the newly acquired knowledge: <ul style="list-style-type: none"> including items which indicate a building on existing or prior knowledge. 						
The ability to reflect on strengths and weaknesses as a learner	Recognise strengths and weaknesses and reflect on these: <ul style="list-style-type: none"> including reflective items to identify strengths and weaknesses regarding learning. 						
The ability to keep track of learning	Keep track of learning: <ul style="list-style-type: none"> include items of reflection and revision on a continuous basis. 						
The ability to assume responsibility for learning	Demonstrate a willingness to assume responsibility for learning: <ul style="list-style-type: none"> include items which indicate a willingness to do more than expected. 						
The willingness to take risks while developing creative solutions	Take risks in the search for solutions: <ul style="list-style-type: none"> include items which indicate a boldness to explore, take chances and to come up with unique solutions to problems. 						
The ability to work meaningfully with concepts and content	Interpret, analyse, apply, compare, distinguish between and critically evaluate concepts and content: <ul style="list-style-type: none"> include items such as summaries and reflection on the meaning of concepts and critical evaluation. 						
The ability to assess and value own learning	Assess own learning in terms of quality of learning: <ul style="list-style-type: none"> complete and include self assessment activities. 						

Table 3.13: The assessment instrument of the professional electronic developmental portfolio (Adapted from Van Niekerk, 1998)
(continued)

Ability	Description	Very high	High	Medium	Low	Very low	Not shown
		5	4	3	2	1	0
The ability to make practical applications of theory	Use the theory in practice: <ul style="list-style-type: none"> include items which indicate an ability to apply what was learned in own life world. 						
	Average:						
	TOTAL (5):						
	TOTAL (30):						

3.5 Summary

An analysis of the applicable literature was done, based on the information presented in Chapter 2. The purpose of electronic development portfolios in this specific study was determined and the "characteristics" of the learners involved in this study, were established. Based on the results of the analysis, the following was designed and developed:

- Microsoft Word 97 portfolio templates;
- On-line guides to the Microsoft Word 97 portfolio templates;
- An assignment pertaining to the compilation of electronic portfolios;
- Presentation of articles relating to electronic portfolios;
- An assessment instrument.

This was prepared to be ready for implementation during January 1999.