Chapter 3

3. DEVELOPMENT AND DESIGN

3.1 INTRODUCTION

To achieve success on the World Wide Web, it is important to draw up a Project plan, as well as a Promotional plan. It is important to let your target audience know about your existence on the web. The information architecture aspects of the site development are discussed in detail in the dissertation of Greyvenstein (2001). This dissertation focuses mainly on the promotional aspects of the site.

In this chapter the different stages in the development process of the multimedia program will be described in detail.

The stages in the development process of this web site were built around the stages of the development model of Reeves (1994).

Alessi and Trollip (1991:245) as well as Vaughan (1998:430) also describe the stages of development. The stages are the following:

- Analysis
- Design
- Development
- Implemention
- Formative Evaluation

The research questions will be addressed in this chapter again.

3.2   RESEARCH QUESTIONS

Table 3.1 describes the research questions as discussed in this chapter.

TABLE 3.1   RESEARCH QUESTIONS

TOPIC ADDRESSED	QUESTIONS
Content issues	- How should a web site be constructed to be promotable? - What is the content of existing primary school web sites?
Promotional issues	- How does this specific school intend to promote their web site? - Which promotional aspects would play a role in the promoting of a web site for a primary school? - How can an effective promotional strategy for this web site be implemented? - How can more people be attracted to the web site of Laerskool Lynnwood?
Communication issues	- How can this site be promoted as a community information service? - What is the importance of effective communication when promoting a web site?

3.3   STAGES IN THE DEVELOPMENT PROCESS

The tables are similar to the tables as seen in (Greyvenstein, 2001), but is to be viewed from a promotional perspective.

The stages in the development of the program are summarized in the tables below:

Table 3.2 describes the phases in the analyses stage.

TABLE 3.2   STAGES IN THE DEVELOPMENT PROCESS✦

Stage 1: Analysis

PHASES	ACTIVITIES/TOOLS
Conducting:	
• Goal analysis	• Brainstorming sessions • Meetings involving school management, developers and researchers • Using Reeves'1994 Goal Analyses Tool
• Target group analysis	• Questions to identify the target audience • Descriptions of target audience and target platform • Description of intended hardware and software platform
• Task analysis	The Information designer used: • Task lists • Flowcharts • Workflow diagrams • User scenarios
• Media analysis	• Evaluation of text, graphics, sound, video and authoring tools to determine their suitability for this site
• Information analysis	• Content/feature lists • Information architectures • Taxonomies
• Project plan	• Designing a Project plan
• Promotional analysis	• Identify a target market • Identify where and how the target market can be reached • Identify a message to deliver • Formulate the specific steps in the Promotional plan

Table 3.3 describes the phases in the design stage.

TABLE 3.3   STAGES IN THE DEVELOPMENT PROCESS✦

Stage 2:   Design

PHASES	RATIONALE AND FEATURES
Design of project • Objectives	• Promotable web site • To serve as an Information service • To make sure learner count will rise • Site must be competitive to other primary school web sites • Must serve as an advertising medium • Save customers time and money • To encourage pupils to link to web sites of other primary schools • To encourage pupils to promote their school's web site
• Delivery system	• WWW (World Wide Web) • CD-ROM
• Sequencing of content	• General and specific content • Primary and secondary content • Site map for navigation
• Design specifications	• Are discussed is Chapter 2 with the Literature Review
• Design evaluation instrument	• Questionnaires were designed and statistically processed • Formatting of screens
• Flowcharting	• Diagrams

Table 3.4 describes the phases in the development phase.

TABLE 3.4   STAGES IN THE DEVELOPMENT PROCESS✦

Stage 3: Development

PHASES	METHODS/MATERIALS
• Information Architecture Blueprint	• A-4 Paper Size • 1.44/Stiffy
• Selection of Authoring Tool	• Evaluation and relation of authoring tool, developer's skills and format that new information to update the site will be supplied in
• Formative evaluation	• Print outs of prototype • School management, staff, researchers and developer's comments
• Prototype	• Evaluation of web sites of other primary schools • Prototype • Advice from other expert developers

Table 3.5 describes the phases in the implementation phase.

Table 3.5   STAGES IN THE IMPLEMENTATION PROCESS✦

Stage 4: Implementation

PHASES	TOOLS/MEDIUM
• **Creating the web site**	• Front page • World Wide Web
• **Implementing the promotional strategy**	• Press releases • Internal billboard • Posters • Business cards • School stationary • Letterheads

PHASE 1

3.3.1   ANALYSIS

During the analysis phase, the *purpose* of the research, *limitations in the research, analysis methods* used for the research, as well as *instruments and samples* are discussed. The results of this phase are described in the **goal-, target group-, task-, media-, content- and project analysis.**

3.3.1.1   Purpose of the Analysis

A description of the purpose of the analysis is set out clearly in table 3.6.

TABLE 3.6 PURPOSE OF EACH ANALYSIS PHASE✦

ANALYSIS PHASE	PURPOSE
GOAL	To determine the reasons for Laerskool Lynnwood's web presence.
TARGET GROUP	To determine the audience of the proposed site
TASK	A comprehensive description of all the tasks available on a site, isolating the probable actions of visitors, identifying the conditions under which the actions will occur and determining the proposed most popular user pathways.
MEDIA	To review forms of presentation media available in order to select a combination that will deliver the message most effectively.
CONTENT	To collect and organise information, ensuring that content is relevant, useful, concise but adequate.
PROJECT	An overview of the direction of the project, identify tools and actions and allocate responsibility for each stage of the development process.

This table can also be seen in the dissertation of (Greyvenstein, 2001).

3.3.1.2   Limitations

- It is a fact that Promotional Strategies always have financial implications. The school is a not-for-profit institution and therefore lack of funds restricted the promoting of the web page.

- Limited information is available regarding the promoting of primary school web sites.

- It is very important to maintain the web site (which is time-consuming), because children are always seeking for new information.

- The information on the web site must awaken enthusiasm among the audience.

- Due to the fact that prompt and pro-active actions play such an important role in promotion, the time laps between the original decision to create a web site for the school and the actual launch had a negative impact on the total promotion process.

- The high staff turnover at the school, specifically regarding the information technology lecturer and the appointment of two principles within two years, had a destabilising effect on the continuity of the development process.

- Above-mentioned factors also influenced the coherence of the staff, which in turn affected the promoting of the web site.

3.3.1.3   Analysis Methods

Several analysing instruments were used to collect data during the research process. The data collection methods and instruments are listed in table 3.7. This table can also be found in (Greyvenstein, 2001).

TABLE 3.7   DATA COLLECTION METHODS AND INSTRUMENTS✦

ANALYSIS PHASES	METHODS		
	Document analysis	Interviews	Brainstorming sessions
Goal	✔	✔	✔
Target		✔	✔
Task		✔	✔
Media			✔
Content	✔	✔	✔
Project		✔	
Promotion	✔	✔	✔
INSTRUMENTS			
Content Lists	✔	✔	✔
Research Diary		✔	✔

DATA COLLECTION METHODS AND INSTRUMENTS

3.3.2   Document Analysis

While collecting information for the school's web site, the researchers, as well as the developer used the following documentation to gather the necessary information regarding the promoting and construction of this web page:

- Weekly newsletters
- Information brochures
- Termly Prestige publications
- School Policy
- Proforma's completed by all staff members (Appendix D)

The *content list* was used as an instrument to decide which information would be gathered from the above mentioned documents.

3.3.2.1   *Interviews*

Interviews were held with individual learners from different grades during computer periods and Internet discussions. The teaching staff was also individually interviewed on a more informal basis to establish what their needs were.

The needs of the governing body, marketing committee and the computer committee, were established during interviews.

During the launch of the site at the school's Open Day, the prototype was shown to visitors at the computer centre. The parents and visitors gave feedback and expressed more specific needs; they also supplied ideas on expanding the promotional strategy.

The instruments used for interviewing was the research diary and content lists. All changes made were entered in the diary. Research was done on what the children and parents would like on the web page. Constant changes took place during the development phase and the diary is evidence of every decision made. The content lists were used as 'checklists' to ensure that all aspects were covered.

3.3.2.2 Brainstorming sessions

Sessions took place between different parties involved with the school.

- Governing body
- Marketing committee
- Personnel
- Web page developer
- Researchers
- Computer committee
- Pupils

The research diary and content lists were also used as instruments during the brainstorming sessions.

3.3.3 SAMPLING

No formal sampling was done beforehand. The target audience as defined in paragraph 3.3.1.6, were used as respondents for the research.

3.3.3.1 Pupils of Laerskool Lynnwood

Informal interviews were held with pupils during computer classes to find out what their thoughts and feelings were about the idea of having a Web site. An informal needs assessment was drawn up in the research diary after the interviews to find out what the pupils' would like in the content of the web site.

3.3.3.2   Parents of Laerskool Lynnwood

During the school's open day, potential parents, as well as current parents of Laerskool Lynnwood had the opportunity to look at the web site and give their impression on the content and design of the web site.   Parents were part of the Marketing committee of the school as well as the Governing body. Their decisions during discussions played a very big role in planning the web site. The developer of the web site and the host were parents of Laerskool Lynnwood.

3.3.3.3   Teaching staff of Laerskool Lynnwood

Teachers completed an evaluation form of the web site and gave input during the development of the site to indicate if the web site fulfilled their needs. Changes were made accordingly.

3.3.3.4   Governing body and Marketing Committee of Laerskool Lynnwood

During the interviews with the Governing body and Marketing committee, the content and layout of the web site were decided on. They originally decided in 1999 on the creation of a web site. Several factors (as mentioned in paragraph 3.3.1.2) caused a delay in the development process. For this reason, the Governing Body welcomed the involvement of the researchers, but they reserved the right to make all final decisions.

3.3.4   RESULTS

3.3.4.1   GOAL ANALYSIS

Shiple (2000) remarks: "If you don't know what you're trying to achieve, why bother building a site?" He declares that defining a site's goals "establishes a clear, well-documented idea of what you are about to do, and it ensures that everyone is participating. Group consensus can make or break the project".

For determining the site's mission and purpose Shiple (2000) lists a basic set of questions:

- *What is the mission or purpose of the organisation?*
- *What are the short- and long-term goals of the site?*
- *Who are the intended audiences?*
- *Why will people come to your site?*

To determine the goals of Laerskool Lynnwood's site, brainstorming sessions and meetings were held with the staff, governing body, marketing committee and the computer committee. The following promotional goals were set during these sessions:

- To design a promotional web site.
- To design a web site that can serve as a community information service, where the school and all parties connected to the web can communicate and exchange information in a continuous manner.

3.3.5   TARGET GROUP

According to Shiple (2000) a true audience definition consists of who the users are and what their goal and objectives are. The technology they use to access the site is only a small part of the audience definition. He states: "defining beforehand the user experience you seek establishes a clear, well-documented definition of your audience, and it helps in understanding how users will react to the site".

During the brainstorming sessions, the following key audiences were identified:

- Parents of the school
- Pupils of Laerskool Lynnwood
- Prospective parents of Laerskool Lynnwood

The researchers identified a wider audience by looking further into the matter:

Internal Audience:
- Prospective staff members
- Prospective pupils
- Current staff members

External audience:
- International visitors (Pupils and staff from other countries connected to the Internet).
- Friends and family outside the borders of the direct community not necessarily involved with the school.

This audience will automatically be attracted to the site if the community information network service is implemented effectively.

The researchers realised that if the internal audience visits the site, the web site would promote itself. The results of the questions implicated that external visitors do not play an important role in promoting the web site. The school is a non-for-profit institution and funds are not always available to advertise, by using banners and advertisements. Thus the internal audience of the site will promote it automatically.

The fact that the committees were adamant about having the web site mainly in Afrikaans restricted the target population.

3.3.6   TASK ANALYSIS

According to Wolmarans and Eksteen (cited in van Dyk et al, 1992) the aims of a task analysis which refers to a learning or training situation, is to:
- "provide a comprehensive description of the task;
- isolate the required behaviour
- identify the conditions under which the behaviour will occur in the work situation; and
- determine the criterion of acceptable performance".

To apply abovementioned aims on the development of a web site, they can be adapted as follows:

- To provide a comprehensive description of the tasks available on the web site.
- To isolate the expected behaviour of visitors to the web site.
- To identify the conditions under which the expected behaviour of the visitors will occur.
- To determine the most popular routes of navigation as foreseen by the developers.

Examples of the practical implementation of these actions (as explained in Chapter 1) were the task of the information designer and can be seen in her dissertation (Greyvenstein, 2001).

3.3.7   MEDIA ANALYSIS

Leshin, Pollock & Reigeluth (1992:105) and Kemp (1985) also refer to learning and training situations when they state: "Different media have varying possibilities and limitations – the challenge is to select a medium or combination (the 'media mix') that will deliver the instructional message most cost-effectively."
They describe the different forms of media available:

- text
- audio
- graphics
- video

The same is true when designing a web site. Combinations of text and graphics were used very successfully in the web site of Laerskool Lynnwood.

Due to the enormous amounts of information the site consist of, it was decided to use only text and graphics when building the site.

Unfortunately the researchers could not convince the school of the importance of having at least the main page in English. Any person who does not understand Afrikaans (this means more than 90% of the world population) that might access the school web site will immediately leave. Immediately the doors will be closed to look any further into the web site of Laerskool Lynnwood.

The web site must gain the attention of the user. The user must be interested in the site while browsing through it and the desire to go further through the site must be created.

Figure 3.1   Screen capture of school's home page
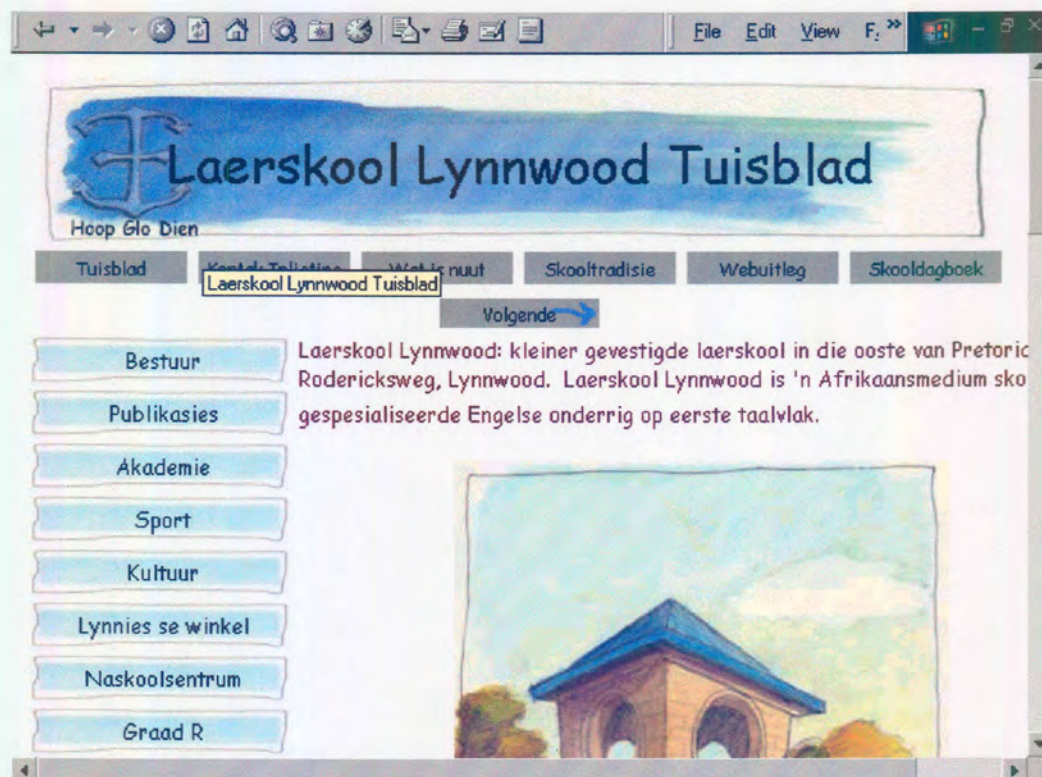
The users must find the site so interesting that they want to link their web sites to the site of Laerskool Lynnwood. A community information service can be created in this manner and the school and all parties connected to the web can communicate and exchange information in a continuous manner. The web site of Laerskool Lynnwood must promote the school itself.

3.3.8   CONTENT ANALYSIS

To determine what content was needed for the web site, the researchers did the following:

- *Investigate web sites of other Primary Schools.*

Research was done on web sites of other schools to see how they were constructed to be promotable.

We (the researchers) selected web sites of 15 schools and used them as a sample to determine the content of the average primary school web site. (See Appendix F for detailed analysis).

- *Interviews with the current staff of Laerskool Lynnwood.*

Members of the staff submitted their inputs of activities that they were responsible for. Their inputs were used during the content analysis phase.

- *Brainstorming sessions with the computer committee and the marketing committee.*

During the brainstorming sessions with the Computer Committee, Marketing Committee and the Governing Body the structuring of the content was finalised.

The following table that summarises the results can also be seen in (Greyvenstein, 2001) as it was a combined effort.

TABLE 3.8   CONTENT OF THE AVERAGE PRIMARY SCHOOL WEB SITE✦

TOPIC	PERCENTAGE
Contact information	100 %
General information/rules	100%
Academic information	67 %
Advertisement/Links page	60 %
Cultural activities	60 %
Management information	60 %
Sport activities	60 %
Newsletters/circulars	53 %
School history/Anthem	53 %
Current projects	47 %
Exceptional facilities	47 %
Vision/Mission/Policy	47%
Year/semester plan	40 %
Personnel information	34 %
Prestige page	34 %
What's on at school	34 %
Guide for new parents	13 %
Parental involvement	13 %
Photo page	13 %
Site map	13 %
Admission requirements	7 %
After school care	7 %
School shop	7 %
School/Roadmaps	7 %
School publications	0 %

Using information gained from the abovementioned parties, the researchers and the constructor of the web site created flowcharts to illustrate the intended architecture and summary of content for the first prototype of the web site of Laerskool Lynnwood. (See Appendix E for example flowchart).

Integrating the abovementioned information, the following promotional tactics were used to ensure that the web site of Laerskool Lynnwood would be a promotable product for the World Wide Web.

TABLE 3.9 DO'S FOR MARKETING A WEB SITE ON THE INTERNET
(Adapted from Levine and Baroudi, 1995:85)

| STRATEGY	IMPLICATION
Keep messages short.	Messages should be as brief as possible.
Stay on the topic.	Everything you say must be on the topic.
Provide immediately useful info.	Give free, useful information, update frequently.
Remember that the customer must bite first.	Give specific and essential information about the school.
Think globally.	The Internet is a worldwide phenomenon, embracing all continents and dozens of languages.

Promotional Tactics on the Internet

All the abovementioned promotional strategies were kept in mind when collecting, organising and presenting the content of the web site of Laerskool Lynnwood.

Unfortunately the last item in the table called, "Think globally" was not successfully implemented. The web site could be promoted with more success if it were in Afrikaans and English. Customers from overseas will not waste their time on a site if they do not understand the language.

While comparing the web sites of the 15 different primary schools, the researchers found the web site of "Laerskool Fleur". Although this is also an

Afrikaans primary school their web site's home page is in English, which at least gives an introduction to the school, its location and what it stands for.

Figure 3.2   Screen capture of Home Page of Laerskool Fleur
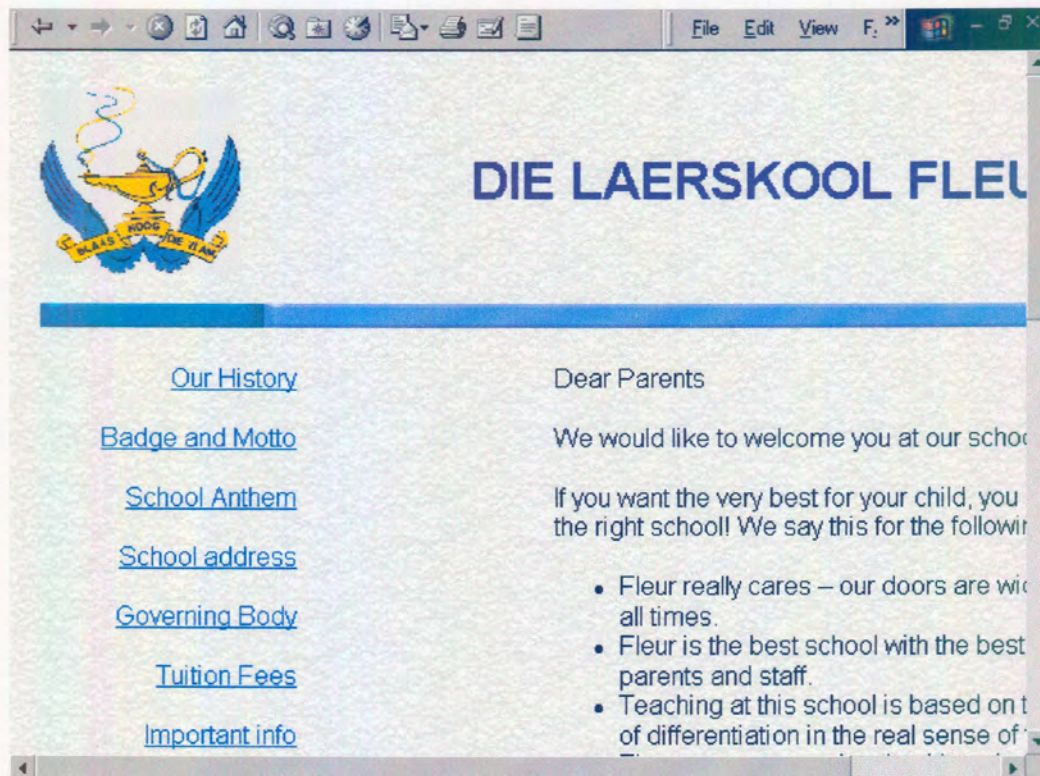
3.3.9   PROJECT ANALYSIS

PROJECT PLAN

While promoting the web site it is very important to remember that the school is a not-for-profit organisation. Marketing and promotion needs money and it was something to keep in mind at all times.

The following table describes the Project Plan as seen from a promotional perspective (for a plan regarding informational design aspects, see Greyvenstein, 2001).

TABLE 3.10 PROJECT PLAN

Stages of Development:	Tools and Activities	Responsibility
Decide what the specific content and structure of this web site should be from a promotional perspective.	Goal analysis Target group analysis Content analysis Project plan	Principle Governing body Developers Researchers
Review the first draft of the prototype from a promotional perspective.	Print outs	Developer Researchers
Consult a graphic designer and give input on how the graphics could enhance the promotability of the web page.	Example of graphics.	Principal Developer Researchers
Review the graphic designs from a promotable point of view.	Evaluate special graphics designed for the school.	Principal Developer Researcher
Launch of the initial site to coincide with the school's open day.	Implementation of the first step of a promotional strategy.	Researchers
Test results with questionnaires and interviews.	Interviews Questionnaires	Researchers
Give feedback to school and find out what their reaction is.	Findings and recommendation report for further development.	Researchers

3.3.10 PROMOTIONAL ANALYSIS

Grillen (2000) says: "Design your site around what your audience needs. Include the information your prospects and customers need. Most people just want the information they need fast, without too much trouble".

During the target analysis, the key audience was already identified.

To convey your marketing message successfully to the public, Janal (2000) says: "A key rule of marketing is to be able to tell customers how you are different and better than competitors". The "marketing goal" using the site of Laerskool Lynnwood was to show prospective parents, pupils and staff members why this school could be the right choice.

The following promotional plan was constructed to ensure the success of the web site.

TABLE 3.11 PROMOTIONAL PLAN

STEPS	PROPOSED OUTCOME
1. Enlarge a colour printout of the site's Home Page. Block mount and display in the school hall on the open day.	To introduce the web site to the visitors and show them what it looks like in order to spur their interest and to entice their curiosity to view the site.
2. Place massive posters, created by pupils in art class, spelling out the web address along the corridors – leading to the computer centre.	To show visitors the way to the venue where they can look at the web site.
3. Display the web site to visitors in the computer centre.	To give visitors the whole overview (picture) of the site.
4. Advertise the URL and E-mail address through the rest of the school by placing posters all over the corridors and school grounds.	To impress the URL and E-mail address on all visitors.
5. Create business cards for the Principal and Governing Body with the URL on it.	To promote the web site outside the school.
6. Placing an advertisement in the school's newsletter.	To reach parents who did not attend the open day of the school.
7. Sign up with http://www.saschools.co.za.	To reach an even wider audience.
8. Formal launching in 2002: Marketing day involving local newspapers and important figures and businesses from the community.	To promote the final upgraded web site and upgraded computer centre to the widest possible audience.
9. Handing out of CD's.	To promote the final product.

PHASE 2

3.3.11   DESIGN

According to Vaughan (1998:455):

> "The **cover and package** plays a big role when building a Web site. You have many options for **designing** the look and feel of the site."

The researchers kept this essential information in mind when designing the web site. The input of our audience during the designing phase where used to try to satisfy everyone as far as possible. During this phase we realised that one is often warned to avoid judging a book by its cover, but the reality is that it takes about two seconds for executives to assess the quality of the site. The impression made by the first glance can either attract a visitor or lead to rejection.

## 3.3.12   MATTERS TAKEN INTO CONSIDERATION

- The school is a not-for-profit institution and this was an important fact to keep in mind while designing the web site.
- The web site was designed to advertise Laerskool Lynnwood and to link to other primary schools.
- The web site of Laerskool Lynnwood should also be competitive with other products of the same kind.

- Prospective parents who will visit the web site should get answers when asking the question: "What will my child benefit by going to Laerskool Lynnwood rather than to any other primary school in Pretoria?"
- The web site will also be promoted through the community. Thus it has to suit their needs as well.

3.3.13   OBJECTIVES

As discussed in Chapter 2, we as the researchers, kept in mind while designing the site, that the look and feel should be pleasant and aesthetic, inviting and engaging. We designed the interface to have a pleasant look, because it is a primary school and the mix of colours is soft, but appealing. The school emblem and all the graphics are designed to have a very subtle appearance and do not dominate the rest of the site.

Figure 3.3   Screen capture of the school emblem and a pleasant graphic
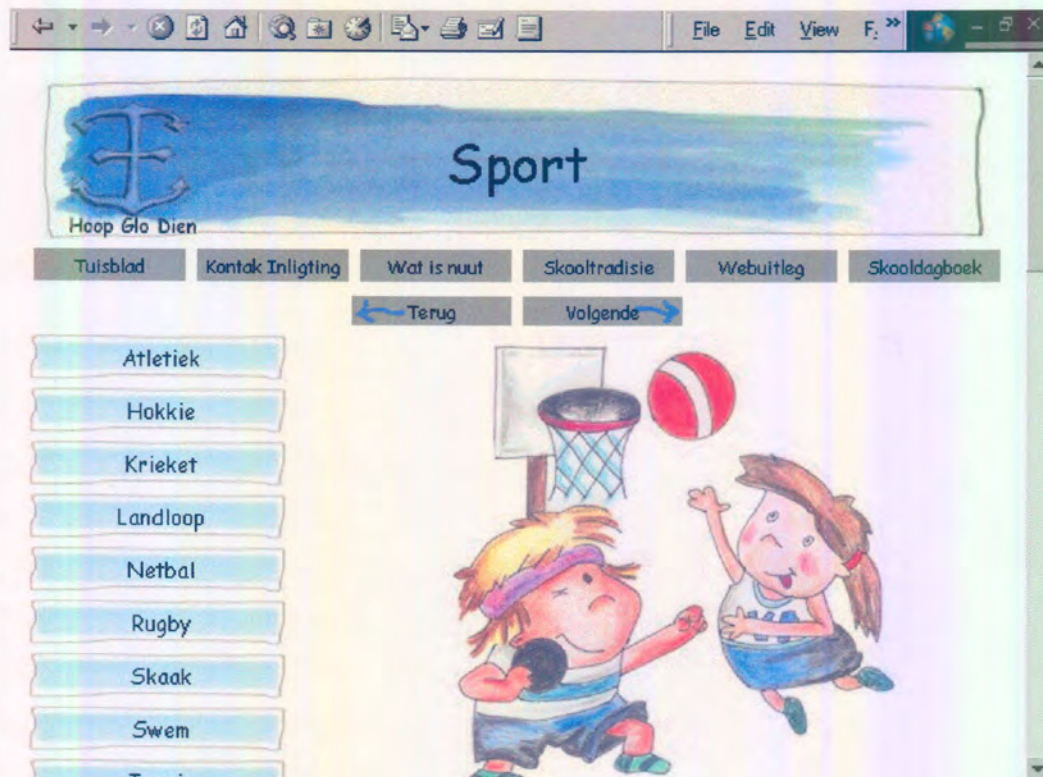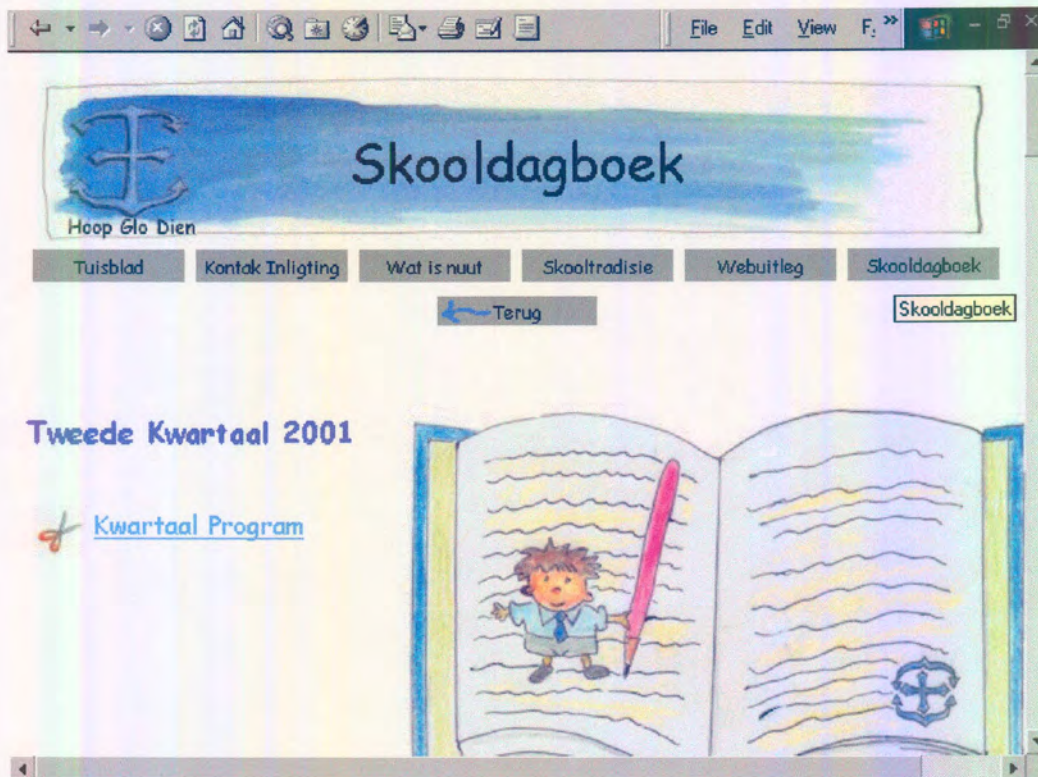
We (the researchers) attempted to design the navigation clues clearly and consistently. The horizontal navigation button is meaningful and the vertical navigation bar is simple and straightforward. The whole navigational system is intended to be user-friendly.

A primary school's purpose for having a web site on the World Wide Web is to encourage children to discover a more positive side of the web through the web page of Lynnwood Laerskool. After research was done, the following **design objectives** were aimed for:

The design objectives as listed in Table 3.12 are viewed from a promotional perspective, where as the design objectives listed by Greyvenstein (2001) are viewed from a content and design perspective.

TABLE 3.12   DESIGN OBJECTIVES

OBJECTIVES	HOW TO FULFIL OBJECTIVES
To render an information service.	The web site will serve as a community information kiosk.
To let the learner counts rise.	The site must function as a tool to recruit pupils.
To compete with other primary school sites.	The site will be compared to web sites of other primary schools to evaluate the quality and efficiency.
To serve as an advertising medium.	It must provide value to the customers and give them the opportunity to advertise their businesses on the web site.
To save the customers time and money.	The users of the site will receive first hand information on the site concerning the school activities and no phoning around is necessary.
To open doors for learners to link to other schools on the WWW.	Learners can start at their school's web site and link to other schools and information can be exchanged in this way.
To encourage learners to promote the school's web site.	By linking to other schools, more users will know about Laerskool Lynnwood and their activities.

3.3.14   DELIVERY SYSTEM

The learners of Laerskool Lynnwood, as well as their parents will be the primary users of the web site. The initial decision of the school to create a web site was based on the fact that most of the key audience as identified by them, had access to the World Wide Web.

The site will be available on CD. For the purpose of this study, the research project will by available for later reference. Should the school later decide not to carry on with the web site, this study will still be independent.

Information about the following matters will be available:

- This dissertation
- Dissertation of (Greyvenstein, 2001)
- Web site

3.3.15   SEQUENCING OF THE CONTENT

A navigation map (site map) is provided to assist the user throughout the site. The navigation clues are clear and consistent. The whole navigation system is intended to be user-friendly. The links are related and connected to the different sections in the site.

Figure 3.4   Screen capture of site map
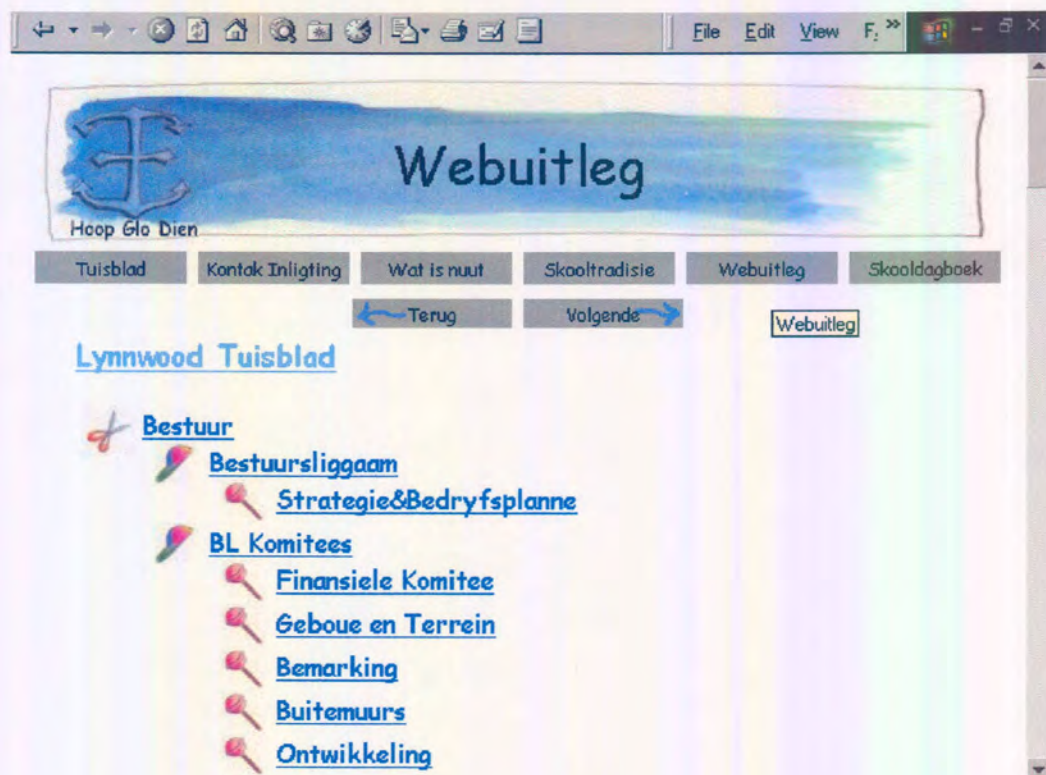
3.3.16   DESIGN SPECIFICATIONS

A professional web site developer constructed the web site and the researchers gave input during the construction of the site. The services of a graphic designer were also used. Different design specifications were kept in mind while designing the web site.

Table 3.13 - 3.15 summarises the design specifications as implemented in the web site of Laerskool Lynnwood.

The tables are similar to the tables as seen in Greyvenstein (2001), but is to be viewed from a promotional perspective.

Table 3.13 gives a description of the Text Attributes.

TABLE 3.13 DESIGN SPECIFICATIONS: TEXT ATTRIBUTES✦

TEXT ATTRIBUTES	DESCRIPTION
Type face	The main headings, sub-headings and text throughout the web page are written in Comic Sans. It suits the primary school and the readability is very good. It creates an Informal and fun look, suitable for a primary institution.
Size	The size of the main headings is 16 pt. Sub-headings are in 14 pt, and the content is written is 12 pt or 10 pt. The vertical and horizontal navigation bars are written in 10 pt.
Colour	The text is written in black and the colour of the background is white. The main headings and sub-headings are written in light blue. The horizontal navigation bar is written in black on a grey background. While the left vertical navigation bar appears in light blue with a grey border around it. Colour plays an important role, and because it's a primary school, the use of different colours prevents monotony. The main heading of the "Skooldagboek" is written in dark purple and the sub-headings appear in light purple. The content of the "Skooldagboek" is written in black.
Type styles	The main headings are written in bold to be easily readable. Underlining is used where the user can link further on the web page. *Italics* are used underneath certain tables to describe some facts inside the table.
Justification	A justified left margin is used.
Case	Only lower case is used in the text of the web site. To distinguish between more important and less important content, main headings and sub-headings, bold writing is used, as well as a difference in the font sizes.
Icons/Symbols	Lots of interesting icons are used on the page "Webuitleg", like scissors, lollypops and caps. This is a familiar object in the day-to-day life of a child. The icons are exciting and attention grabbing. There is a strong connotation between the character of a primary school and the different icons used.
Buttons	Text buttons were used to link to different sections.
Layout of content	A site map was created to organise the logic flow of the content. Enough white spaces are left and minimal text under each heading.

Table 3.14 gives a description of the screen design principles.

TABLE 3.14   SCREEN DESIGN PRINCIPLES✦

SCREEN DESIGN PRINCIPLES:	DESCRIPTION
Consistency	The main headings appear the same according to their size and their placing on the web site. Navigation throughout the site is the same. The graphic designs are also consistent in their look and feel. They are soft, but appealing and meaningful.
Simplicity	Comic Sans was used throughout. The line spacing is 1.5 cm. To keep the site simple, no video sound was used, but only text and graphics.
Clarity	The content is designed for primary school children and their parents. Navigation is user-friendly and clear. There is harmony between the content and the graphics as both are centred on primary schools and metaphors and related to primary schools.

Table 3.15 gives a description of the aesthetic considerations.

TABLE 3.15 AESTHETIC CONSIDERATIONS✦

AESTHETIC CONSIDERATIONS:	DESCRIPTION
Balance and Harmony	The graphics, colour and text create a feeling of harmony and the presence of a primary school atmosphere.
Graphics and Images	The graphics were well designed and consistent throughout the web site. The colours of the graphics are soft and appealing and suit the character of a primary school.
Colours	The colours were soft, but suit the character of the primary school. The black text on the white background is easily readable and speaks of simplicity.

3.3.17   DESIGN THE EVALUATION INSTRUMENTS

The prototype and printouts were informally evaluated by the researchers, developer, staff, governing council and marketing committee of the school. After implementing all recommendations and the graphic designer's input, the initial site was launched to coincide with the school's Open Day in July 2000. The researchers formally evaluated the site through interviews, questionnaires and expert interface ratings.

The results of this summative evaluation are discussed in Chapter 5.

PHASE 3

3.3.18   DEVELOPMENT

3.3.18.1   *Final phase in the development of the prototype*

A professional web page designer was involved throughout the development process to construct the site; the researchers gave input to ensure a practical and workable product.

3.3.18.2   *Information architechture blueprint*

From all the tools used to create the final blueprint of the site, storyboards demonstrate structure and navigation. "Storyboards for web sites tend to be rather plain looking, using text and simple graphic shapes (boxes and circles) to indicate buttons and picture placement" (Michael Lerner Productions, 1999).

The researchers in conjunction with the designer did basic storyboarding. Storyboards were used to show how the site's structure and navigation work should across pages.   This was done to provide a definite outline of what the look and feel of the web site must be.

The developer then incorporated storyboards, user profiles, user scenarios etc. to create the final architectures that account for all the pages in the site. This formed the blueprint from which the prototype was created.

3.3.18.3   Selecting of authoring tool

The designer, together with the researchers decided on an authoring tool, *Front Page*. We are all familiar with the Microsoft programs and it appears as the most suitable authoring tool.

The fact that *FrontPage* works in fixed tables also influenced our decision to rather use *FrontPage* instead of *Dreamweaver*.

Vaughan (1998:401) says: " among the many tools on this emerging marketplace, *FrontPage* from Microsoft links to Microsoft Office and provides not only WYSIWIG support for many of the latest HTML formatting extensions but also extensive web site management support through its *FrontPage Explorer* application".

3.3.18.4   Prototype

The developer compiled the first prototype of the web site after all proposed elements and information was collected. A general template called Front Page was used. It was important for the graphic designer to see the prototype before designing the graphics for the final site.

3.3.18.5   Formative evaluation

While the designer built the site, informal formative evaluation was done by die governing body, computer committee and the researchers by means of informal discussion groups.   Formative evaluation took place after the

completion of every stage. Management, staff and researchers had to recommend corrections and changes and evaluated printouts of the prototype.

PHASE 4

3.3.19   IMPLEMENTATION

According to Michael Lerner Productions (1999): "Converting existing high-resolution graphics usually means reducing the image from 300 pixels or more per inch to 72 pixels per inch." He suggests that techniques like indexing and dithering should rather be used to fix problems in the appearance of an image, creating jagged edges, or gaps where colours have been removed.

The average screen size is between 14 and 15 inches and is set to display a 640 x 480 pixel screen. The site was designed to fit into the available space. We were assured that no information would get lost. It also simplifies the printing process. According to Vaughan (1998: 497) the design should fit into the working space on the monitor, which are 600 x 300 pixels. He further suggested that it must be kept in mind that the controls and slider bars of the browser take up additional space and the developer has to include eye catchers which can be viewed without having to scroll in the above mentioned space.

Michael Lerner Productions (1999) suggested that graphics should be designed as a width of 470 pixels or less. The reason for this is that many monitors display images at a resolution of 640 x 480. Working with a high-resolution monitor, you will design banners at a width of 570 pixels or more. At this width, your graphic will spill off the right of many screens. The designer and researchers kept all these facts in mind when designing the site.

Webmonkey (1999) also comments that the smallest monitor out there is 640
x 480 pixels, so your design should work on a basic level within those
parameters. People want to see without scrolling.

A CD-ROM can hold large amounts of data up to 660 MB. All the information
will be available on a CD. The CD can also serve as a promotional tool,
especially to be issued on the school's open day to potential parents, as well
as other primary schools.

Michael Lerner Productions (1999) explains that the Java browser on the
user's host interprets the bytecodes and provides the display. They further
suggested that some Netscape extensions to the <img> tag could speed up
downloading time for those viewing the web with Navigator browser. If you
specify the *"height" and "width"* of the graphic within the image tag, Netscape
Navigator knows how much space to set aside for the graphic, and it begins
downloading immediately.

All the design specifications used when designing this site is set out in
Tables 3.13, 3.14, 3.15.

Chapter 4

4. EVALUATION PROCEDURE

4.1 INTRODUCTION

Vaughan (1998:542) describes testing as follows: "Test it, then test it again; that's the unavoidable rule. It's critical that you take the time to thoroughly exercise your project and fix both big and little problems, in the end you will save yourself a great deal of agony"!

This chapter reports on the **summative evaluation** procedure that was followed to evaluate the program. The methodology will be a descriptive, quantitative and qualitative case study of the web site of Laerskool Lynnwood.

According to (The Trustees of Indiana University, 1997), *summative evaluation* is an after-the-fact assessment that may be used for promotion and tenure decisions. **Formative evaluation** is designed to provide you with information you can use.

Trochim (1999) discusses the differences between *formative and summative evaluation* as follows: "Formative evaluations strengthen or improve the object being evaluated and summative evaluation examine the effects or outcomes of some object".

The *purpose* of the site and *evaluation objectives* during the evaluation of the web site will be discussed. The *limitations* that influenced the effectiveness of the evaluation procedure are also listed in this chapter. The *target population and samples* describe exactly which parents and other parties

participated in the evaluation of the program. All the *evaluation instruments* and *tools*, which were used in the evaluation, are also described very briefly in this chapter.   The *data collection methods* consist of *instruments* used, as well as the *research methodology*.

4.1.1 RESEARCH QUESTIONS

The <u>main research question</u> was the following:

> ### *How should this web site be designed to promote the primary school internally and externally?*

The research <u>sub-question</u> that needed to be answered was:

> ### *Does this web site promote the school successfully?*
> ### *Is this web site a promotionable product?*

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The research sub-questions that will be addressed in this chapter will be the following:

- Content and design Issues: Is this web site a promotable product?
- Promotional Issues: Does this web site promote the school successfully?

4.1.2 STAGES IN THE EVALUATION PROCESS

The stages in the evaluation process of the program are summarised in the **Table 4.1** below.

TABLE 4.1   STAGES IN THE EVALUATION PROCESS

STAGES	ACTIVITIES	OUTPUT
Evaluation	• Summative evaluation.	• Processing of results. • Evaluation of questionnaires completed by parents. • Evaluation report from Statomet. • Evaluation report from expert users.
Report	• React on findings made from evaluation and compile recommendations.	• Conducting report.
Conclusion	• Conducting report on conclusions.	• Delivery of product.

According to Reeves (1994), the following issues need to be discussed during the evaluation process:

- Background
- Purpose of evaluation
- Limitations
- Target population and samples
- Data collection methods

4.2 BACKGROUND

After the formative evaluation (as described in Chapter 3) was completed, the recommended improvements were made to the prototype. The developer then made the necessary changes regarding the interface, using specially designed graphics. This culminated into the initial web site that was published on the WWW.

This chapter describes the summative evaluation of this site to find out whether it is a promotable site.

Summative evaluation was done on this site for the following reasons:
- to establish the week points in the product
- to establish to what extent the main research question was answered
- to establish if the sub questions were answered successfully

4.3 PURPOSE OF EVALUATION AND OBJECTIVES

The main purpose for the evaluation of the web site is to determine if the web site is a promotable product that can be used to promote the school.

Issues to consider during the development and promotion
of a primary school web site

This purpose of the evaluation leads to the formulation of the following objectives:

- To render an information service
- To determine whether the initial promotion of the web site was successful (Steps 1-4 of the promotion plan as listed in Table 3.11)
- To be competitive with other primary school web sites
- To serve as an advertising medium
- To save all parties involved time and money
- To open doors for learners to link to other schools on the WWW
- To encourage learners to promote their school's web site

4.4 LIMITATIONS

The evaluation process was limited by the following factors:

- Not many parents had visited the web site for various reasons.
- At the time of the evaluation, the web site had been available on the Internet for only three months.
- Many respondents were not willing to partake in the study.
- Comparing this web site to the sites of other schools was difficult, as not many respondents had visited the sites of other schools.

4.5 TARGET POPULATION AND SAMPLES USED

Bailey (1987), as quoted in Korpel (2000) describes convenience sampling as being adequate if the researcher does not want to generalise results beyond

the sample. According to her, it can also be used if the study is merely a trail run for a larger study, or if the investigator plans to repeat the study at a later stage.

The target population for the questionnaire was the parents of Laerskool Lynnwood. The questionnaire was issued to 90 parents. The questionnaires were distributed to the parents of two groups of pupils as explained in Table 4.2 below.

TABLE 4.2   QUESTIONNAIRE DISTRIBUTION✦

JUNIOR PRIMARY PHASE		SENIOR PRIMARY PHASE	
Grade	Number of questionnaires	Grade	Number of questionnaires
Grade 1 L	15	Grade 4 L	15
Grade 2 L	15	Grade 4 N	15
Grade 3 L	15	Grade 5 Y	15

The researchers saw no need to involve the parents of the Grade 7 pupils, as they would be leaving the school at the end of the year.

The respondents for the expert rating were WWW experts. The group consisted of 5 people who work on the Internet on a daily basis and 5 students who were completing the final year in a web-designing course.

4.6 DATA COLLECTION METHODS

4.6.1 INSTRUMENTS

The following instruments were used during the evaluation process:

- A *questionnaire* tested how effective the site reach the audience and what the needs of the audience/users are. Questions used are open-ended questions, fill-in- and multiple-choice questions.

The parents of the school completed the first questionnaire. An evaluation form tested the expert's interface rating. 5 final year students in web page design completed the same evaluation from.

The questionnaire consists of promoting-, as well as content issues.

 The first part of the questionnaire was designed to determine what the computer literacy levels of the parents were and to establish their access to computers and the Internet. It consists of 17 questions.

The second part was formulated to determine how many parents have visited the web site, their impression of the site and how this web site compares to other primary school web sites.

The third part of the questionnaire contained questions to answer to specific needs of the target population regarding the web site.
Parts two and three consist of 22 questions in total.

The *interface evaluation form* was rated on a scale of one to four.   The experts rated the navigation and layout of the web site.   (See Table 5.1)

Table 4.3 lists the content regarding the topics of the navigation and layout parts.

Table 4.3   CONTENT REGARDING THE NAVIGATION AND LAYOUT

NAVIGATION TOPICS	LAYOUT TOPICS
• Consistency of buttons • Home page • Site map • Access to help • Multiple ways of navigation	• Consistent look and feel • Appropriate use of colours • Complimentary fonts • Uncluttered interface • Readability • Download time • Printable

Each of the experts gave suggestions and comments regarding their evaluation of the web site.

5 final year students completed the same evaluation form, but were not asked to give any comments. The same interface evaluation form was used by the researchers to evaluate the same 15 primary school web sites as used in the content analysis in Chapter 3.

The results were used as a basis for comparison regarding the web site of Laerskool Lynnwood.

4.6.2 RESEARCH METHOD

According to Trochim (1999), summative evaluation can be subdivided as follows:

- **"needs assessment** determines who needs the program, how great the need is, and what might work to meet the need

- **"evaluability assessment** determines whether an evaluation is feasible and how stakeholders can help shape its usefulness

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- **"structured conceptualisation** helps stakeholders define the program or technology, the target population, and the possible outcomes
- **"implementation evaluation** monitors the fidelity of the program or technology delivery
- **"process evaluation** investigates the process of delivering the program or technology, including alternative delivery procedures".

Seeing as this study determines whether an evaluation is feasible and how stakeholders can help to shape its usefulness, it can be classified as evaluability assessment.

Yin as quoted in Korpel (2000) says that a case study can be exploratory, descriptive or explanatory. She continues that:

"Case studies are the preferred strategy when 'how' and 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real life event".

This case study describes the reaction of the respondents (as defined in paragraph 4.5) to the web site of Laerskool Lynnwood.

4.6.3 ANALYSING THE DATA

The outcome of the evaluation on the questionnaires will be discussed in Chapter 5.