CHAPTER SEVEN
Prototyping Phase: Transforming conditions for use into use (Cycle 3)

> We are concerned that schools are being pushed and enslaved by data rather than being steered by leaders, with data providing information that they can use to engage in thoughtful planning and make reasoned and targeted decisions to move towards continuous improvement (Earl & Katz, 2006, p. xiii)

The first part (two cycles) of the Prototyping Phase focused on establishing the conditions for use of the feedback system (See Chapter 6). This chapter is the natural progression of the Prototyping Phase to examine how to transform these conditions into use by schools. It takes a closer look at the research design and results for the third of the three design cycles employed during the Prototyping Phase.

The complete research cycle discussed in this chapter consisted of the development of successive prototypes of the feedback system, which were formatively evaluated to inform the development of the final prototype for this thesis. The focus of this chapter is illustrated graphically in Figure 7.1. The pre-existing system and feedback prototypes are illustrated in blue and the evaluation activities in green. Every full design cycle consists of the prototype adaptation followed by implementation and corresponding formative evaluation of that prototype.

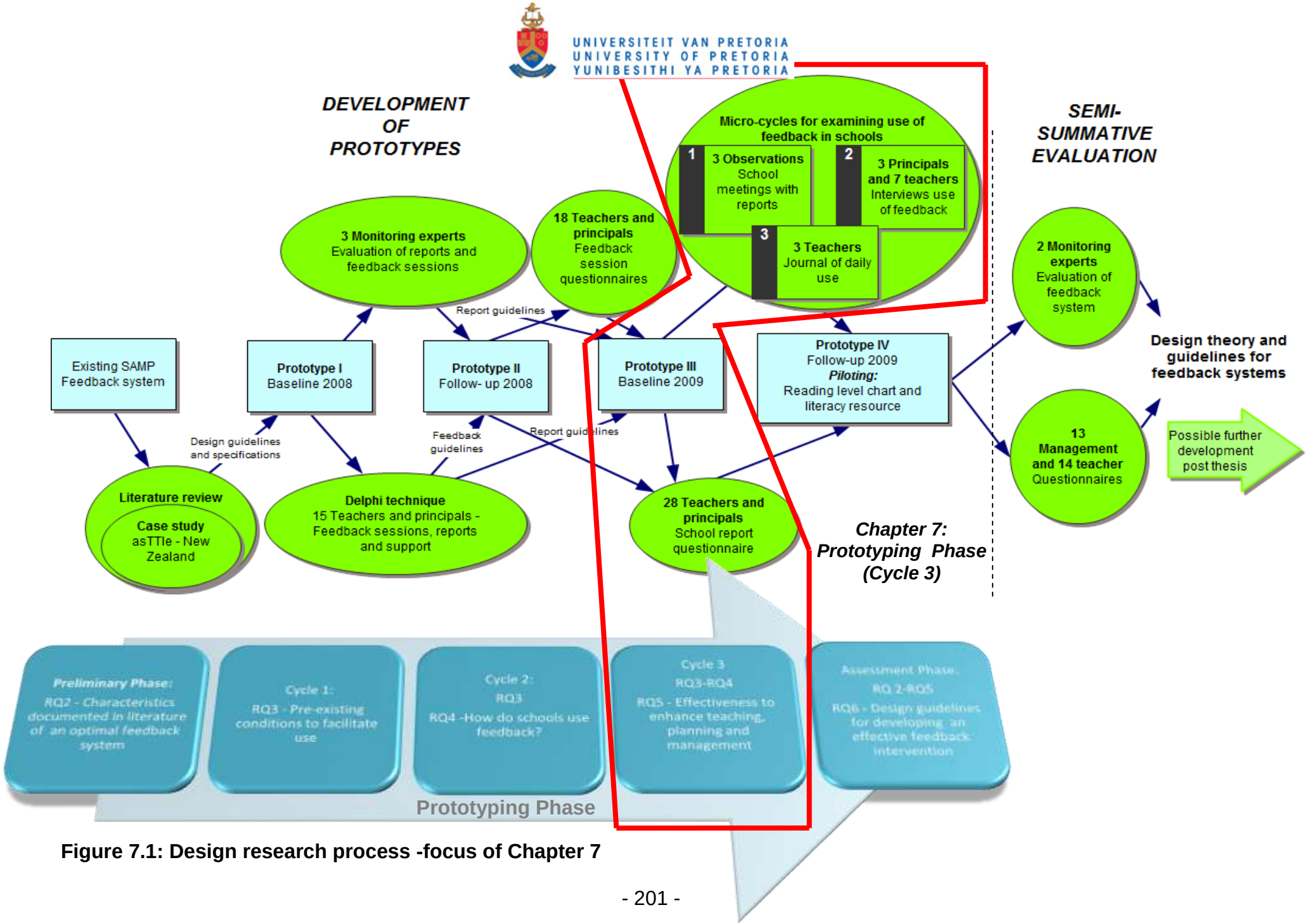


Figure 7.1: Design research process -focus of Chapter 7

In the following section the third cycle of the Prototyping Phase is discussed, beginning with a description of the prototype, followed by a discussion of the research design used to evaluate it. The evaluation activities are guided by the research questions being addressed and the evaluative focus for the specific cycle. While there is a specific focus for each cycle there is always some deliberate overlap and a cycle may address some aspects of other research questions or evaluative foci. The research procedures for each cycle examine the sampling, data collection and instruments, analysis and discussion.

7.1 Cycle 3 (Prototype III - Baseline 2009)

Feedback Prototype III incorporated the learning from Cycle 2 as well as the larger structural changes to the reports in order to transform the conditions for use of the feedback into action in the schools. The evaluative focus for this cycle was twofold:

1. To evaluate the functioning of the new report format, to facilitate further adaptation.
2. To evaluate the functioning of the complete learner performance feedback system, as a facilitator of evidence-based practise and planning in the schools.

The formative evaluation for this cycle employed a questionnaire to evaluate the functioning of the new report format. The transforming of the feedback into action in schools was investigated through observations of school meetings, structured reflective journals kept by schools and group interviews with teachers, HoDs and principals to follow up on the observations and journal data. The focus was thus to determine how schools were interacting with the feedback and the barriers or facilitating factors to employing it in each school's specific context. Questions aimed to establish how these aspects were being used in the context for which they were designed and to inform further improvement of the intervention. Expressed or presented use, along with limited data on actual use were included for this thesis.

Cycle 3 therefore focused on the following ***research questions***:

3. *What pre-existing conditions need to be established in the feedback system to facilitate the use of the learner performance feedback system?* ***(limited to the reports)***
4. *How do schools use feedback?*
5. *How effective is the feedback system in enhancing classroom practices, management and planning activities?* ***(focussing on expected efficacy)***

The evaluation information served to provide ***design guidelines*** relating to the report. Design guidelines to facilitate transforming the feedback into action were also developed:

3. *Establishing conditions for use:* This development stage aimed at improving the components of the feedback system. For this cycle there was a detailed examination of the design of the reports.
4. *Transforming conditions for use into action in schools:* This development stage followed school processes in employing the feedback system on a management, planning and classroom practice level. The focus was on the application of the report and feedback sessions data in the schools, along with the use of support materials, instrument manuals and linked intervention materials. This exploration was the focus of the micro-cycles of evaluation of Prototype III.

The evaluation in this cycle focused specifically on the ***evaluative foci*** of actual practicality and expected efficacy with specific reference to the reports and manner in which feedback is used in schools. In the following section Prototype III of the feedback system developed and implemented in Cycle 3 is introduced shortly.

7.1.1 Prototype III – Baseline 2009

A sample of 22 schools (Afrikaans, English and Sepedi) was maintained for the baseline 2009 assessment, with exactly 1,700 Grade 1 learners assessed. All the schools also participated in the feedback system and all received paper-based reports, but this time delivered prior to the feedback session. The report was also

split into two parts to create a report and a separate instrument manual. Teachers, principals and HoDs were invited to attend the feedback session. Schools were also invited to contact the CEA if there were any questions or if there was any help and support needed with interpretation and planning. At the feedback session each school received a DVD or CD containing freely available literacy, phonics, numeracy and mathematics materials. The components of Prototype III are shown in Table 7.1.

Table 7.1: Prototype III – Baseline 2009 components

Component	Description
Paper-based baseline report	Produced for each school individually and delivered to each school a week before the feedback session
Paper-based instrument manual	Delivered to schools with reports to accompany report
Baseline feedback session	Principals and teachers from all participating schools invited to the University of Pretoria
Electronic resource	Electronic collection of literacy, phonics, numeracy and mathematics materials produced on CD/DVD and provided to each school at the feedback session. Including an electronic copy of the report (PDF) with a learner dataset for the school in Excel
Telephonic, written and face-to-face communication	On an ad hoc basis as required

The changes to the paper-based reports, manuals and feedback sessions, as well as the newly included electronic resources are discussed below.

7.1.1.1 Reports

The major changes to the reports noted from Cycle 1 were implemented in this cycle. The first involved splitting the report into a separate report and instrument manual to facilitate interpretation and shorten it. The adapted structure of the reports was as follows:

1. Introduction to the SAMP project
2. Results per school ***(adapted)***
    a. Individual results
    b. Notes on interpretation

c. Learner results table

d. Learners at risk

e. Exceptional learners

3. Conclusion and recommendations ***(adapted)***

Section 1, the introduction to the project, remained similar to that used in Prototype II. A number of changes were implemented in the report production, data representation and report delivery to improve the turnaround time and ensure that the schools could receive reports prior to attending the feedback session. Firstly, data were no longer reported as comparative data for all schools for the current year. School data for a particular school were represented, compared to the school's performance in the previous year as well as other schools' results in the previous year (see Figure 7.2). This shift had the benefits of allowing report writing to commence earlier, as all the fieldwork did not need to be completed and the reporting style also allowed schools to view results more easily in the context of the previous year's performance.

Table 1: Average percentage per scale and total for Afrikaans learners

Scales	Results from 2008 SAMP baseline assessment							School 12 - 2009
	School 6	School 8	School 10	School 12	School 19	School 25	Overall Score - Afrikaans	
Handwriting	86	83	85	86	82	80	**84**	78
Early Phonics	67	65	51	56	71	55	**62**	56
Early Reading	46	50	38	42	45	31	**43**	41
Early Mathematics	84	86	78	85	87	78	**83**	84
English Additional	72	71	61	58	74	58	**66**	63
SAMP Total	**66**	**67**	**56**	**61**	**68**	**54**	**63**	**60**

Figure 7.2: Example of comparative results per language group per scale - comparison of 2009 school results to 2008-2009 – Prototype III

Secondly, the report writing process was automated, but due to financial limitations it was accomplished by use of advanced report writing techniques incorporating the *Microsoft Office Suite*. All programming was done by the researcher. This limited cost and ensured that any technical errors experienced during the design and development process could be addressed in-house.

Zapawa (2005, pp. 5-6) notes a number of other benefits to using the *Microsoft Office Suite* for advanced report-writing over custom purchased and designed systems, including:

- Real-time retrieval of data across the suite
- Sorts, breaks and totals can easily be removed and modified
- Some report types are dynamic and powerful
- Reports are cost effective
- Report production time is often shorter than with competing software
- Reports are integrated with other Microsoft Office Suite program[me]s

This report automation reduced turnaround time, decreased opportunities for transposition errors and therefore reduced costs related to manual report production[42]. As *Microsoft Office* was used, it also meant that datasets could easily be provided to schools on the electronic resource CD/DVD in a format that could be accessed through *Excel* for further analysis. This automation process was in line with the findings from the case study and literature review that the use of ICT was recommended for sustainability and expansion.

The automation process also influenced the representation style of the graphs, reducing the numbers of bars to three. Only the school average for 2009 and 2008 as well as the language group average for 2008 was reproduced, as opposed to the individual results for each school (see Figure 7.3). The presentation style was updated with the *2007 Office* package to give a more professional appearance. The vertical axis was also pre-set to a scale from 0-100 to ensure consistency throughout.

[42] Although the report process was automated, interpretation and discussions still had to be done individually to ensure that the quality of data representation was not negatively impacted.

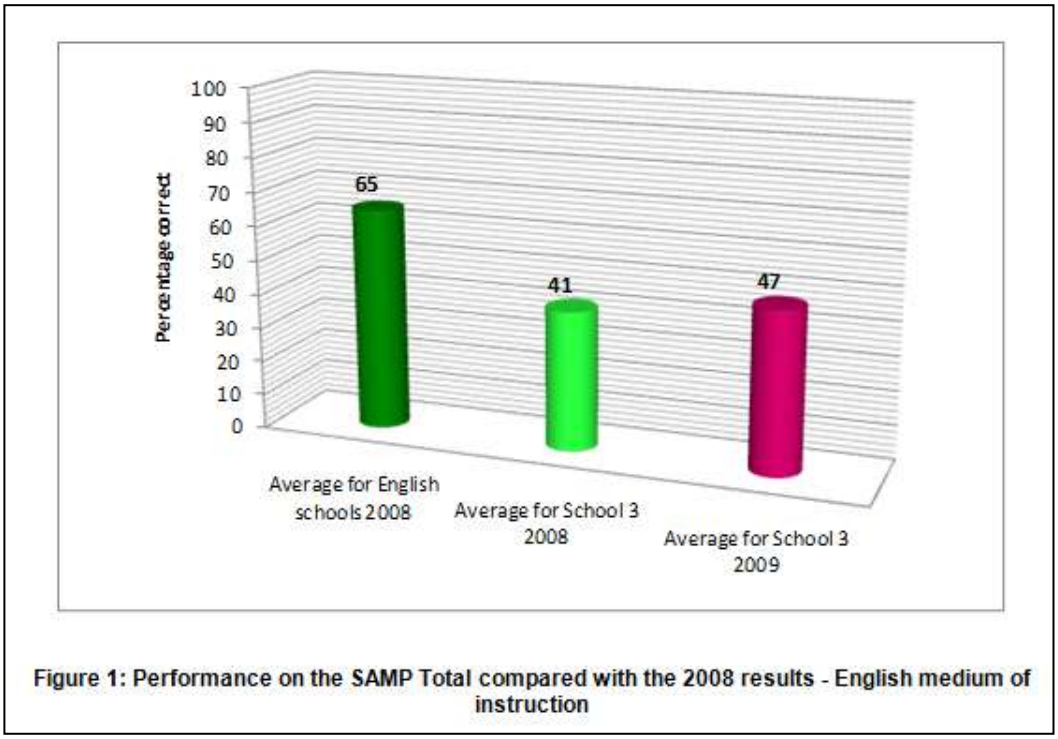
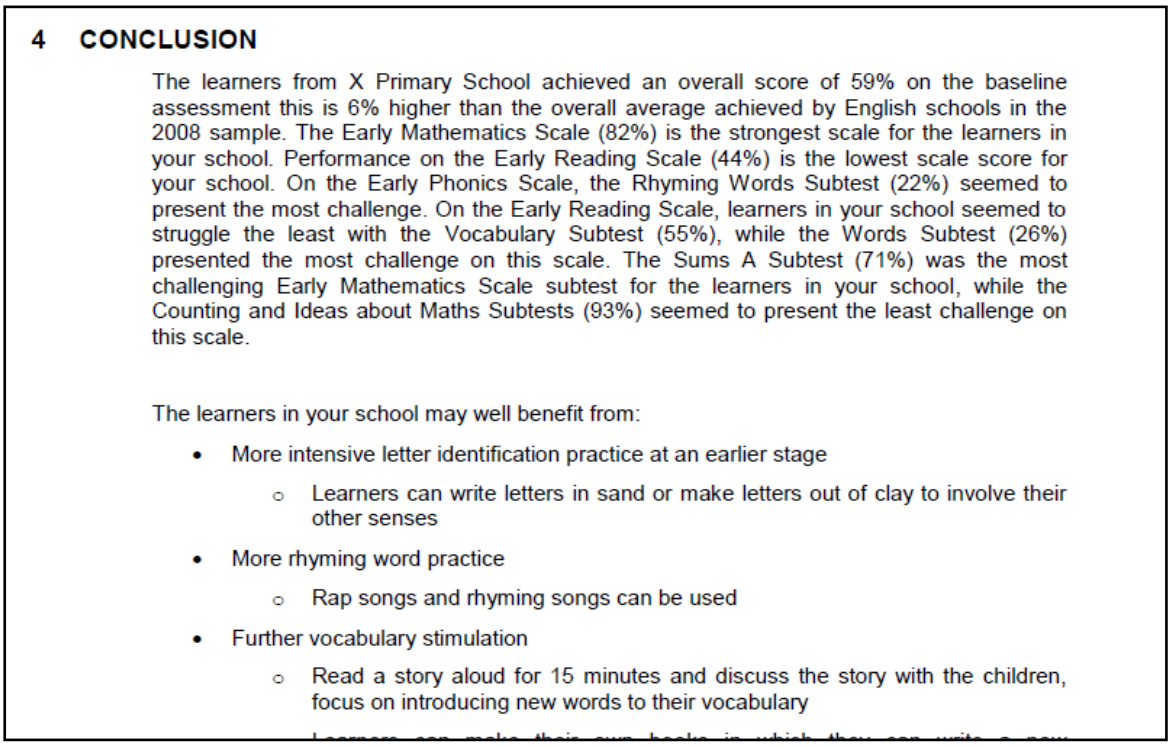


Figure 7.3: Example of overall performance graph for school 3 compared to English medium schools – Prototype III

Thirdly, reports were no longer handed out during the feedback session. A team member would visit each school and deliver the report and manual to the school a week prior to the feedback session.

The report conclusion section was expanded and the discussion and summary of results supplemented with a list of suggested activities tailored to the results of the specific school. A comparative component was also added to this section, discussing changes in the school results over a two year period (see Figure 7.4).



4 CONCLUSION

The learners from X Primary School achieved an overall score of 59% on the baseline assessment this is 6% higher than the overall average achieved by English schools in the 2008 sample. The Early Mathematics Scale (82%) is the strongest scale for the learners in your school. Performance on the Early Reading Scale (44%) is the lowest scale score for your school. On the Early Phonics Scale, the Rhyming Words Subtest (22%) seemed to present the most challenge. On the Early Reading Scale, learners in your school seemed to struggle the least with the Vocabulary Subtest (55%), while the Words Subtest (26%) presented the most challenge on this scale. The Sums A Subtest (71%) was the most challenging Early Mathematics Scale subtest for the learners in your school, while the Counting and Ideas about Maths Subtests (93%) seemed to present the least challenge on this scale.

The learners in your school may well benefit from:

- More intensive letter identification practice at an earlier stage
  - Learners can write letters in sand or make letters out of clay to involve their other senses
- More rhyming word practice
  - Rap songs and rhyming songs can be used
- Further vocabulary stimulation
  - Read a story aloud for 15 minutes and discuss the story with the children, focus on introducing new words to their vocabulary

Figure 7.4: Expanded Conclusion Section – Prototype III

In addition to the paper-based report, the report was also saved as a PDF document. The electronic version of the report was saved on the electronic resource for each school to allow them to print out more full-colour reports if required. Schools could also use the report in electronic format.

The instrument manuals that were separated from the report are now discussed below.

7.1.1.2 Instrument Manuals

All the schools in the sample received a separate instrument manual delivered with the reports. The manual still contained a description of the project and the various subtests and scales in the assessment. The description of the link between the curriculum and each subtest, as well as the underlying skills assessed in each one was expanded to facilitate use of the data.

The new manuals were expanded to include sections on the quality of the data with reference to validity and reliability (see Figure 7.5) as well as a section on interpretation (see Figure 7.6). The interpretation section provided guidelines on how to interpret and use each section of the report in detail.

for the various scales found in the SAMP assessment. The reliabilities for all the scales are well above .80 which indicates that the results are reliable for the participating learners.

Table 1 Reliability coefficients for the SAMP assessment

Scale in the assessment	Reliability Coefficient
Early Phonics	.89
Early Reading	.96
Early Mathematics	.95
Total	.97

Figure 7.5: Manual- Excerpt from the Quality of Data Section – Prototype III

In this section the school's results are compared to the results of all the schools from the previous year. This comparison includes the results from your own school for the previous year. Results are presented in two tables the first is the results per scale (see Table 2 below) and the second the results per subtest.

Table 2: Average percentage per scale and total for Afrikaans learners

Scales	Results from 2008 SAMP baseline assessment							School x - 2009
	School x	School 8	School 10	School 12	School 19	School 25	Overall Score - Afrikaans	
Handwriting	86	83	85	86	82	80	84	84
Early Phonics	67	65	51	56	71	55	62	78
Early Reading	46	50	38	42	45	31	43	55
Early Mathematics	84	86	78	85	87	78	83	86
English Additional	72	71	61	58	74	58	66	75
SAMP Total	66	67	56	61	68	54	63	73

Figure 7.6: Manual- Excerpt from the Notes on Interpretation Section – Prototype III

The feedback session of Prototype III is discussed below.

7.1.1.3 Feedback Session

All schools were invited to attend the feedback session. The session was different from the previous sessions, as schools had already received their reports. Therefore, no reports were handed out at the session, though each school received a data reference sheet for 2009, showing the school comparative data for 2009 that was not covered in the report. Each school also received their individual electronic resource. The feedback sessions was shortened to one hour and consisted of a presentation by the project leader followed by an introduction to the electronic resource. The feedback session pertained to:

- A shortened introduction to the CEA and the project ***(modified)***
- An overall description of the assessment

- Presentation of additional data on the constitution of the sample, based on data provided by the schools ***(new)***
- Presentation of the new report format ***(new)***
- Introduction of the new data reference sheets handed out at the feedback session ***(new)***
- An example of how to make sense of the data in the new format
- Introduction of the electronic resource ***(new)***
- An opportunity for discussion and questions

The feedback session still followed the same order, with handouts of the presentation being presented and refreshments being served. The focus for this feedback session was on familiarising the schools with the new report format, with a separate manual, introducing the data reference sheets and electronic resource.

The data sheets were compiled from the comparative data for all the schools for the baseline assessment in 2009 (see Figure 7.7). The comparative data were presented for each of the scales. The sheets supplemented the data from the reports that examined the school results in comparison to the previous year's results. Each school received a data sheet printed back-to-back and laminated.

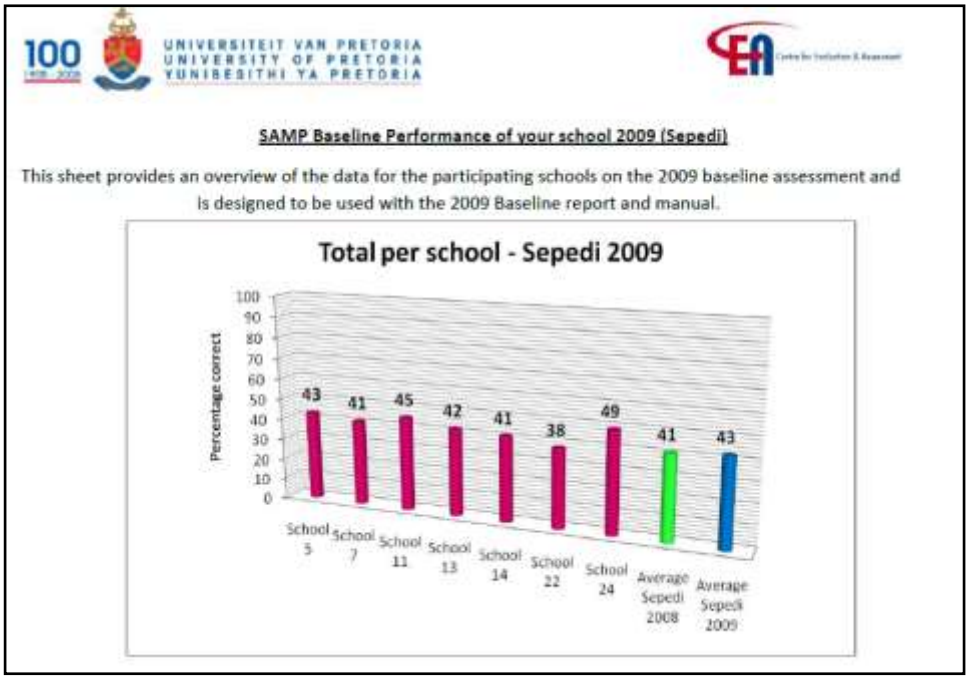


Figure 7.7: Excerpt from datasheet – Prototype III

The electronic resource is discussed in the next section.

7.1.1.4 Electronic Resource

The electronic resource (see Figure 7.8) was produced in the form of a CD or DVD[43] and was provided to each school. Each resource contained a collection of resources for classroom or home use, varying from printable materials to presentations and electronic games. The materials on the electronic resource were a collection of freely available materials from a variety of sources in both South Africa and internationally. Each resource also included an electronic copy of the specific school's report and a manual. Bookmarks to each section of the electronic report allowed readers to click on the section name for easy navigation of the report. The resource also contained a dataset of the school's own data to facilitate further analysis of the data by the school through quick sorting and filtering functions (see Figure 7.9). All resources were evaluated by CEA staff for inclusion and all documents and programmes were loaded on the DVD/CD to ensure schools could use the resource even if internet connectivity was not available.

Figure 7.8: Electronic resource – Prototype III

[43] Schools were contacted to determine if they had access to a computer with a DVD or CD-Rom to determine which format they required

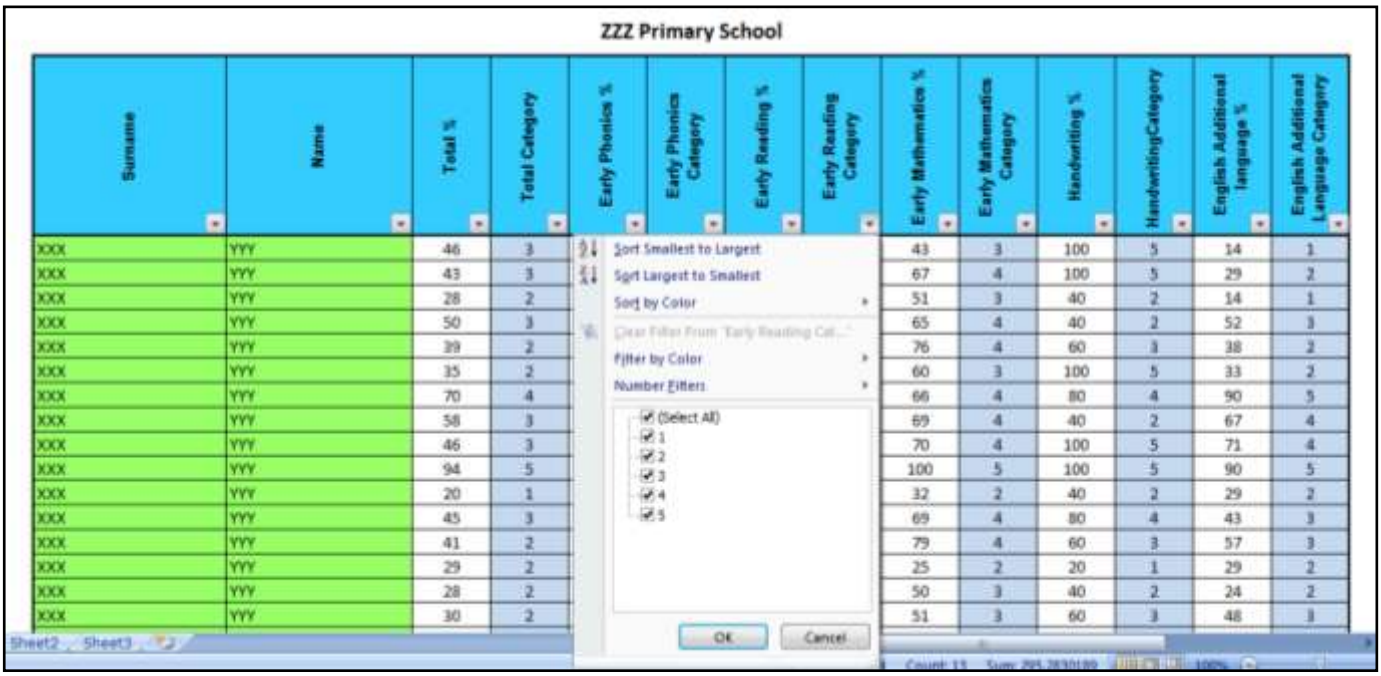


Figure 7.9: Electronic dataset – Prototype III

7.1.2 Formative Evaluation of Prototype III

The formative evaluation of Prototype III took place with two foci. Firstly, the evaluation aimed to examine the practicality and use of the 2009 baseline report that incorporated a separate manual and support CD/DVD with an electronic report and dataset through a questionnaire. The evaluation of the 2009 report was also compared to the 2008 report. Secondly, an attempt was made to observe the transformation of the feedback into planning and action through observations of school meetings, structured reflective journals kept by schools and group interviews with teachers, HoDs and principals to follow up on the observations and journal data.

7.1.2.1 Sampling

All schools in the SAMP sample participated in the ***feedback prototypes***, i.e. all 22 schools in the sample received reports, were invited to the feedback session and received support material and telephonic support if required. The report evaluation questionnaire was handed out at the feedback session, while the school observations, journals and interviews took place at the schools themselves

Sampling for report evaluation questionnaire

All schools who participated in the feedback session were asked to complete the report questionnaire. In most cases each school completed more than one

questionnaire as teachers, HoDs and Principals were in attendance. A non-response analysis was conducted (see Table 7.2), with all but one English and one Afrikaans schools participating in some round of the analysis and three of the seven Sepedi schools doing so. In total, 16 of the 22 schools participated in the report questionnaire, with a total of 28 individual responses.

Table 7.2: Response analysis for Report Questionnaire –Prototype III

School	Grades represented	Language of instruction	Number of questionnaires
School 4	1	English	1
School 5	1, 2	Sepedi	2
School 8	2	Afrikaans	1
School 11	1	Sepedi	3
School 12	R	Afrikaans	1
School 16	1	English	2
School 17	1	English/Afrikaans	1
School 18	1	English	2
School 20	1	English	1
School 21	1	English	1
School 22	1, 2	Sepedi	3
School 23	1, 2	English	4
School 25	1	Afrikaans/English	1
School 26	1	English	1
School 27	1, R	Afrikaans	2
School 28	1	Afrikaans	2
Total			**28**

Sampling for observations, journals and interviews

The sample for this paper consists of three schools that were purposefully selected. The schools were selected based on the criteria of usage and scores improving from previous assessments from each language group. These schools participated in the feedback session and showed good gains from the baseline to the follow-up assessment. One school was chosen per language group (English, Afrikaans and Sepedi).

7.1.2.2 Data Collection

For the report evaluation, all participants in the feedback session were provided with questionnaires to complete. The questionnaires were not only focused on the new 2009 baseline report format, including the separate manual and electronic report, but also had a comparative component in which the schools could indicate if they preferred the 2008 or 2009 report format for each specific component (See audit trail CD/DVD)

The data collection for the three sampled schools employed three different instruments with the data collected in each informing and guiding the development of the following ones. This meant that there was an iterative process between data collection and analysis to gain an in-depth understanding of how the schools use the feedback system. The instruments were:

1. **Non-participant observations (n=3):** schools were observed by the researcher during their usual meetings about the feedback data. Participants ranged from teachers, HoDs and principals and were determined by the usual processes the schools employed.
2. **Classroom journals (n=4):** teachers were requested to fill in a daily semi-structured journal about their use of the feedback in their school. Journals were kept over a four- week period. The guiding questions related to:
    - the influence of the feedback on teacher's planning, practice, communication, individual learner support
    - the accessibility and practicality of the feedback for use
    - barriers to use of the feedback
3. **Semi-structured interviews (n=5):** these were conducted with principals, HoDs and teachers. Principals were interviewed individually and the teachers and HoDs participated in focus groups. The interviews served to follow up on the observations and journals and gain further clarification. The semi-structured questions focused on:
    - the types of data and materials in the feedback system that were used
    - the types of use that took place and the purpose
    - procedures of data-use in the schools (e.g. data paths, different roles of staff, additional training and support)
    - changes in the school attributable to use of the feedback data
    - barriers to use of the data
    - possible improvements in the feedback of the data

The data collected through these instruments were thematically analysed.

7.1.2.3 Data Capturing

Data from the report questionnaire was captured electronically both in textual forms for qualitative analysis and in *Excel* and *SPSS* for descriptive analysis of

frequencies. The qualitative data from the school observations, journals and interviews were captured through field notes from meetings, the journal data and transcription of interview data.

7.1.2.4 Data Analysis

Descriptive statistics were analysed using the frequencies, mean and mode values. Data from the three cases were analysed throughout the data collection process. The analyses informed development of later instruments to clarify information received from earlier data processes. This iterative data collection and analysis process resulted in a rich picture of data-use in each of the schools.

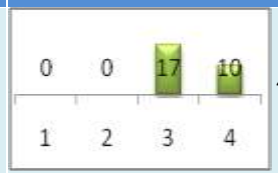
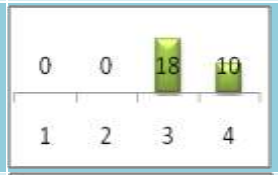
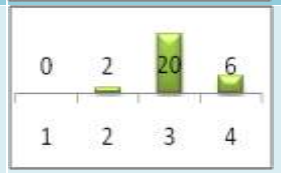
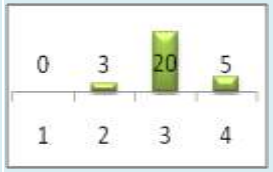
All data were captured electronically and analysed per meaningful unit of text. Codes were generated through inductive process and allocated to each unit of text. Once coding was completed, codes were clustered together in meaningful groups to generate themes. For example, the theme *professional development* includes codes such as *use to increase data-literacy* and *use to identify training needs*. The analysis process was facilitated by the computer aided qualitative data analysis programme *Atlas.ti*.

7.1.2.5 Results and Findings - Report Evaluation Questionnaire

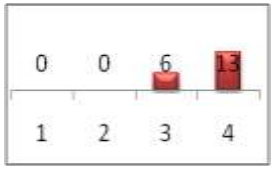
The results of the report questionnaire are summarised in Table 7.3. Overall, rating for the 2008 and 2009 reports were both very high (3.2 and 3.6 out of a possible 4 respectively). The schools however indicated a preference for the 2009 report on all aspects. The following aspects were investigated:

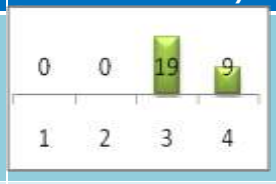
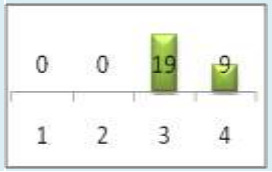
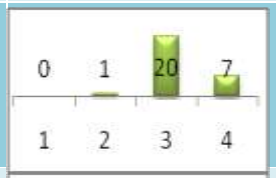
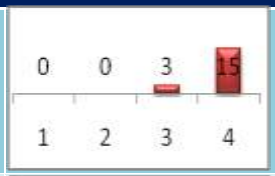
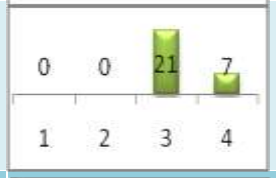
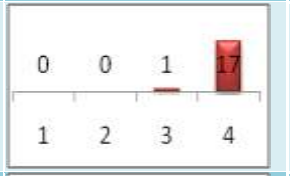
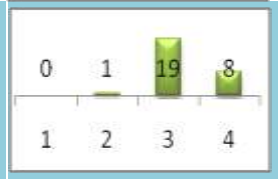
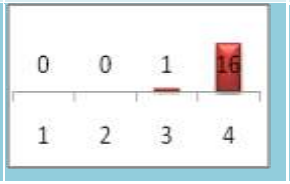
- Usefulness of the information (now incorporated in the manual)
- Presentation of the results
- Support for implementation of results
- Layout and accessibility
- Overall impression
- Overall appropriateness and influence

Table 7.3: Report Evaluation Questionnaire Data

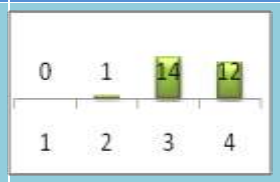
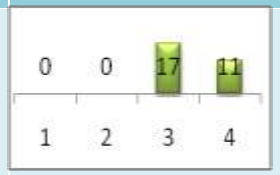
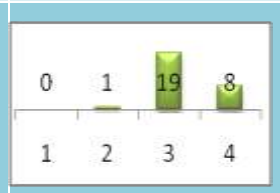
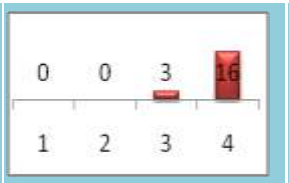
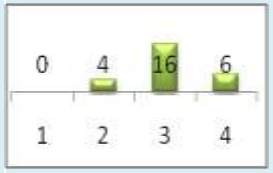
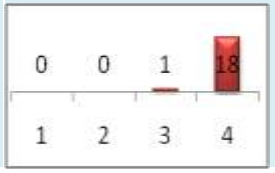
Question	Average rating 2008 1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2008 (1=Poor - 4 = *Excel*lent)	Written comments 2008	Average rating 2009 (1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2009 (1=Poor - 4 = *Excel*lent)	Written comments 2009	Mode preference 2008/2009
Usefulness of the information	**3.3**			**3.5**			
1. Introduction and explanation of project	3.4	 [44]	-	Same for 2008 and 2009			
2. Description of the SAMP assessment	3.4		Very good.				
3. Description of subtests and scales	3.1		-	3.7		-	2009
Presentation of results	**3.2**			**3.6**			
4. Graphs comparing performances of schools	3.1		-	3.6		-	2009

[44] The numbers below the X-axis: 1,2,3,4 represents the different categories on the scale, 1=Poor- 4=Excellent. The numbers above the X-axis represent the frequency of responses for each category. In this example, 13 respondents rated this aspect as 4, or Excellent. Please also note that, not all respondents answered all questions.

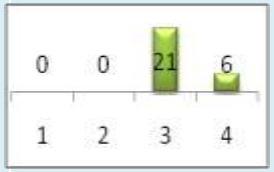
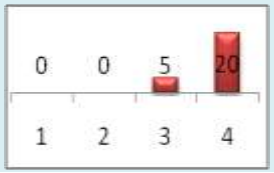
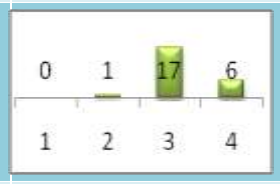
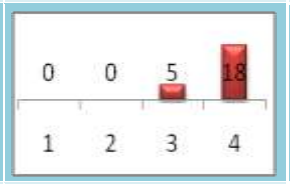
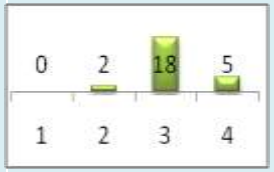
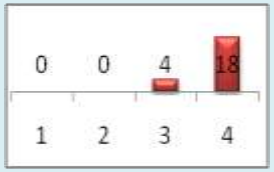
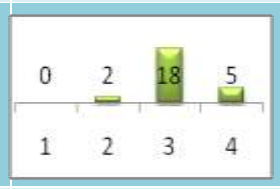
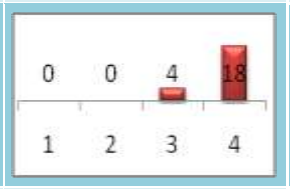
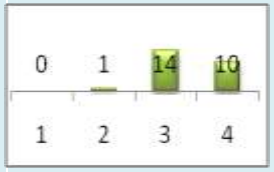
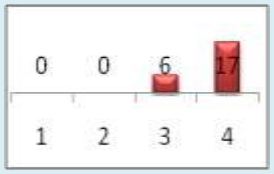


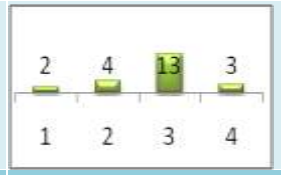
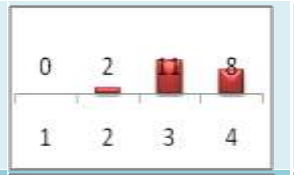
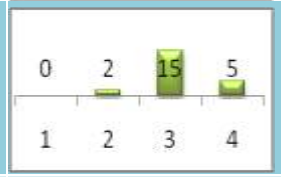
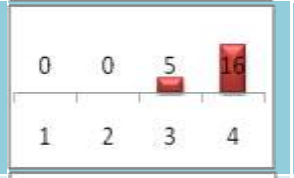
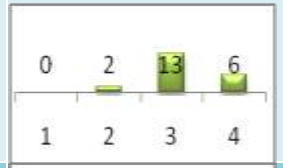
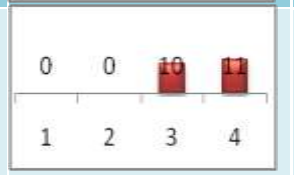
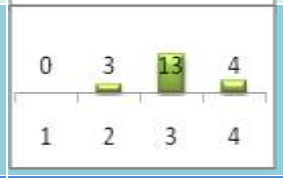
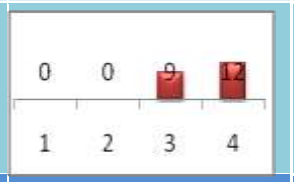
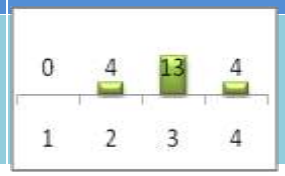
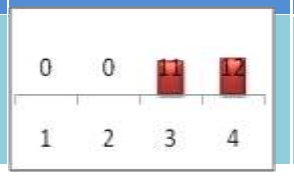
Question	Average rating 2008 1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2008 (1=Poor - 4 = *Excel*lent)	Written comments 2008	Average rating 2009 (1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2009 (1=Poor - 4 = *Excel*lent)	Written comments 2009	Mode preference 2008/2009
5. Graphs showing my school's differential performance	3.3		-	Same for 2008 and 2009			
6. Discussion of graphs and tables	3.3		-				
7. Presentation of individual results in table format (categories)	3.2		*Digitaal sal goed werk indien 'n rekenaar naby is.*[45]	3.8		-	2009
8. Presentation of individual results in table format (%)	3.3		-	3.9		-	2009
9. Distribution of learner performance graphs	3.3		-	3.9		-	2009

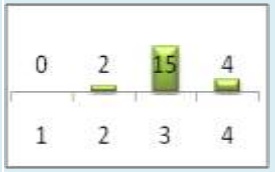
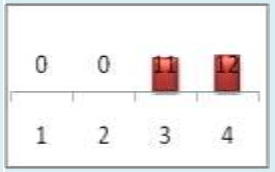
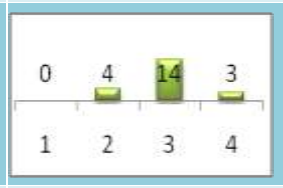
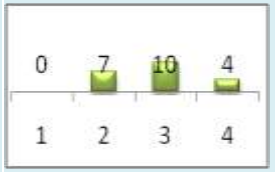
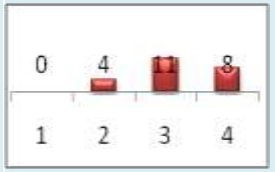
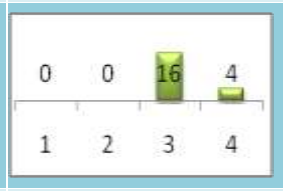
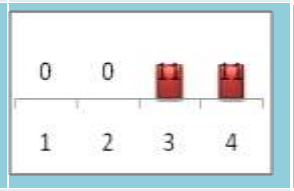
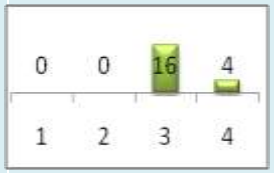
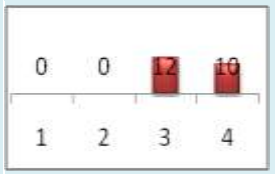
[45] English translation: *"Digital will work well, if a computer is nearby."*

Question	Average rating 2008 1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2008 (1=Poor - 4 = *Excel*lent)	Written comments 2008	Average rating 2009 (1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2009 (1=Poor - 4 = *Excel*lent)	Written comments 2009	Mode preference 2008/2009
Support for implementation of results	**3.3**			**3.6**			
10. Identification of learners at risk	3.4		Very good. Assist in confirming assessment.	**Same for 2008 and 2009**			
11. Identification of exceptional learners	3.4		It works				
12. Conclusion and recommendations	3.3		Thank you	3.8		-	2009
13. Links to and provision of support materials	3.1		-	4.0		*Dankie vir jou moeite!*[46] Thanx!! Very informative and helpful.	2009

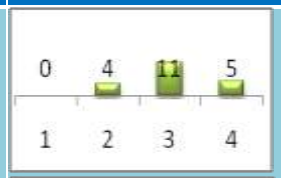
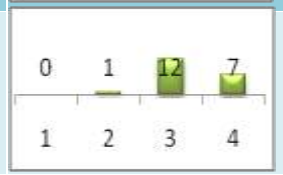
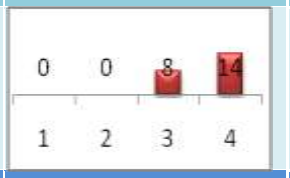
[46] English translation: *"Thank you for taking the trouble."*

Question	Average rating 2008 1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2008 (1=Poor - 4 = *Excel*lent)	Written comments 2008	Average rating 2009 (1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2009 (1=Poor - 4 = *Excel*lent)	Written comments 2009	Mode preference 2008/2009
Layout and accessibility	**3.2**			**3.8**			
14. Ease of finding specific information	3.2		Like it on paper	3.8		Better. Time-saver.	2009
15. Clarity of report	3.2		-	3.8		-	2009
16. Format and presentation of report	3.1		-	3.8		-	2009
17. Support for understanding and interpreting reports	3.1		-	3.8		-	2009
18. Order of presentation of information in report	3.4		-	3.7		-	2009

Question	Average rating 2008 1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2008 (1=Poor - 4 = *Excel*lent)	Written comments 2008	Average rating 2009 (1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2009 (1=Poor - 4 = *Excel*lent)	Written comments 2009	Mode preference 2008/2009
Overall impression	**3.0**			**3.6**			
19. Time between testing and report completion	2.8		-	3.3		Can still improve. Info was not distributed once received at school to grade 1 educators, will advise as info is interesting	2009
20. Overall quality and impression of report	3.1		-	3.8		-	2009
21. Relevance of data in the report to my needs and concerns	3.2		-	3.5		-	2009
22. Amount of data presented in report	3.1		-	3.6		-	2009
Overall appropriateness and influence	**3.1**			**3.5**			
23. Does the report provide required information?	3.0		-	3.5		-	2009

Question	Average rating 2008 1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2008 (1=Poor - 4 = *Excel*lent)	Written comments 2008	Average rating 2009 (1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2009 (1=Poor - 4 = *Excel*lent)	Written comments 2009	Mode preference 2008/2009
24. Does the report help you to assist weak/strong learners in your class?	3.1		-	3.5		-	2009
25. Does the report provide support to address identified problems?	3.0		-	3.5		*Dit bevestig my assessering vir die leerders.*[47] | More!	2009
26. Does the report help with planning and discussions in your school?	2.9		-	3.2		More!	2009
27. Does the report provide you with the opportunity to learn something useful?	3.2		-	3.5			2009
28. Does the report provide your school with the opportunity to learn something useful?	3.2		-	3.5			2009

[47] English translation: *"It confirms my assessment for the learners."*

Question	Average rating 2008 1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2008 (1=Poor - 4 = *Excel*lent)	Written comments 2008	Average rating 2009 (1=Poor - 4 = *Excel*lent	Frequency distribution (count) 2009 (1=Poor - 4 = *Excel*lent)	Written comments 2009	Mode preference 2008/2009
29. Do you trust what is presented in the report?	3.1		-	3.5			2009
30. Do you value what is presented in the report?	3.3		-	3.6		*Dit help om te weet my assessering is op peil.*[48]	2009
Full comments 2009 report	**3.2**			**3.6**			

Question	Theme	Full comments 2009 report
31. What are the strengths of the 2009 report?	**Clarity / Quality**	*Feedback report is mooi uit een gesit en jy weet presies wat aangaan.*[49] | Results are clear for each category tested. | Looks aesthetically good. | Very clear, easy to interpret. | I was impressed with the layout and professional way of report presentation. | I like everything about it. | Thanks for all work from you and team!
	Professional development	*Vind dit leersaam.*[50]
	Support material	More convenient because of the DVD/CD. | *Die CD is waardervol met al die inligting, veral vir die ouers.*[51] | The digital media format of resources and report. Teachers are able to view it electronically. | *Ek hou van die bronne wat beskikbaar is.*[52]| Can't wait to use the CD/DVD!
	Timing	Early feedback.
	Additional variables	Broader parameters. | *Baie uitgebrei.*[53]

[48] English translation: *"It helps me to know my assessment is on par."*
[49] English translation: *"Feedback report is set out nicely and you know exactly what is happening."*
[50] English translation: *"Find it a learning experience."*
[51] English translation: *"The CD is valuable with all the information, especially for the parents."*
[52] English translation: *"I like the resources that are available."*
[53] English translation: *"Very extensive"*

Question	Theme	Full comments 2009 report
32. What aspect of the report would you want changed, added or left out of the report? Please explain.	**Second language assessment**	Test to be done in English as a second language.
	Presentation of data	Preferred the 2008 graphs.
33. In 2009 you received the reports before the feedback session. What difference did this make to you?	**Internal school communication**	Info was not distributed once received at school to grade 1 educators, will advise as info is interesting.
	Earlier opportunity for action	*Jy weet vroegtydig watter leerders benodig meer aandag.*[54] | We could plan and execute our support activities earlier. | Became familiar with it, to discuss with educators in the grade whatever was needed. | Able to reflect on learners results.
	Preparation for feedback session	You come knowing the results. | Better to get it before the meeting. | I was able to be familiar prior to talk and could make opinions and have questions.
	No difference	Didn't really make a difference.
34. What are the weaknesses of the 2009 report?	**Additional variables**	Take learner age into consideration.
	None	I haven't found out any. | Are there any? I think it is great. Thank you for your hard work!
35. What else would you like to have included in the report in future	**Reporting of data**	How do the schools from the different areas compare with each other?[55] Eg. West/North/ East/ Suburbs. A 10 point scale. | I prefer to compare with other schools
	Point of contact	Discuss with the relevant educators not to give it to the principals or clerk.
	More support	How can we help learners who need additional support?
	School identification	I would like to know who the other schools are?
36. Do you have any other comments regarding the reports which have not been addressed above?	**Expansion of Grade coverage**	Are you going to test Gr R in future?
	Happy with project	Thanks for *Excel*lent work and feedback. | It helps us as a guide to verify our judgement of these learners. | I and my staff are truly thankful and we appreciate your hard work.
	Turn-around time	No, Just the report to be earlier.
	Information sessions	An idea would be possibly talk to staff about programme to encourage to take seriously and see value, obviously a fun, short presentation, or a CD to be shown at staff meeting, to encourage enthusiasm.

[54] English translation: *"You know in good time which learners require more attention."*
[55] This suggestion could not be followed-up on as equivalence of the assessment across the different languages has not been established.

Improvement was also noted on every aspect that had changed from the 2008 to 2009 report. Most importantly, the lowest rated aspect of the 2008 report turnaround time from testing to receiving the report was improved from 2.8 to 3.3.

In the open-ended question section responses were grouped according to themes.

The following ***strengths*** of the new 2009 report noted are summarised:

- *Clarity / Quality:* The reports were viewed as clear and of a high quality
- *Professional development:* The reports provided an opportunity for learning and growth.
- *Support material:* The availability of the electronic resource was noted as very positive as it linked the data to support the implementation of changes in the schools. The expanded conclusion section also facilitated this process.
- *Timing:* The faster turnaround time for the 2009 was noted as a strength.
- *Additional variables:* The inclusion of additional variables and data were noted as a strength.

Very few ***suggestions for changes*** were made:

- *Second language assessment:* Some of the non-English medium schools suggested that their learners also be assed in English.
- *Presentation of data:* One school indicated that they preferred the previous year's graphs.

The schools responded to the influence of the ***delivery of the reports prior to the feedback session***.

- *Internal communication in school:* Some schools noted that the earlier delivery allowed for teachers, principals and HoDs to discuss and circulate the information earlier for discussion
- *Earlier opportunity for action:* The data from the report could be acted on even prior to the feedback session
- *Preparation for feedback session:* Some schools indicated that they could be better prepared for the feedback session and have a more purposeful feedback session.

The ***weaknesses*** of the 2009 report were also observed.

- *None:* The schools indicated that they were very happy with the reports and did not experience it as having any weaknesses
- *Additional variables:* One school asked that the ages of learners be incorporated into the data as an additional variable.

In the ***general comments*** section the following ideas were noted:

- *Expansion of Grade coverage:* Some schools recommended the expansion of the assessments to include Grade R.
- *Happy with project:* Most of the schools indicated that they were highly satisfied with the project.
- *Turnaround time:* One school noted that a further improvement of the turnaround time from assessment to report delivery would be welcomed.
- *Information sessions:* It was suggested that information sessions be held at schools to increase awareness of the project and motivate teachers.

7.1.2.6 Exemplary Cases

This section focuses on the data collected through the case studies of the three schools. The observation, journal and interview data for each school is discussed separately for each school. All data were transcribed and thematically analysed using *Atlas.ti*. The three cases are discussed below.

I. SCHOOL A/E

School A/E was situated in a traditionally poor area with predominately Afrikaans learners. Over the previous few years the characteristics of the area had changed and a number of African learners had moved into the area. In response, the school had switched to becoming dual medium with classes in either Afrikaans or English. Socio-economically the learner population was still poor, but little financial support was received from the DoE. As the school was located in an urbanised area with good infrastructure the school was placed in a higher quintile, thus decreasing funding provided by the DoE.

The school principal was committed to a group approach to addressing school issues. He acknowledged the different strengths and weaknesses in staff members and encouraged them to get to know their own personalities and problem-solving preferences during teamwork. The principal felt very strongly that data-based decision-making and planning had to take place and emphasised that all data generated had to be appropriately interpreted and used.

Many of the teachers in the school were still busy with further studies at tertiary institutions. A major focus for the school was ensuring that the new English education component of the school was functioning well. The school often sought alternative and additional funding as many parents could not afford the school fees. The level of parents' education was low and the school struggled to achieve parental participation. Maintaining discipline in the classes was demanding and reduced time on task in the classes.

A/E Data path

At least two Grade 1 teachers from the school attended each feedback session, usually accompanied by the principal or HoD for the foundation phase. Once the reports were received by the school, a meeting was scheduled. Each teacher compared the learner results with their own assessment and list of learners who had been identified for the remedial programme. The HoD was tasked with doing a secondary analysis to determine how learners' pre-schools influenced their performance, in order to

provide feedback to the pre-schools. The principal collated trend data of the school performance based on all previous reports from the SAMP project.

A meeting then took place between the principal, HoD and teachers (see Figure 7.10). The data were discussed and compared to that from other assessments. Tasks were allocated, measurable goals set for improvement and a date set for the next meeting. Follow-up meetings then took place, again in a group format, to monitor progress. The principal also provided the report information to the School Governing Body (SGB) to report on the school's status and progress. The data were also relayed to the School Based Support Team (SBST) to help with planning and support for learners identified as at risk in the feedback. Between the formal meetings teachers and the HoD had informal discussions about progress of individual learners and the success of changes to the curriculum and classroom activities based on the feedback and support materials.

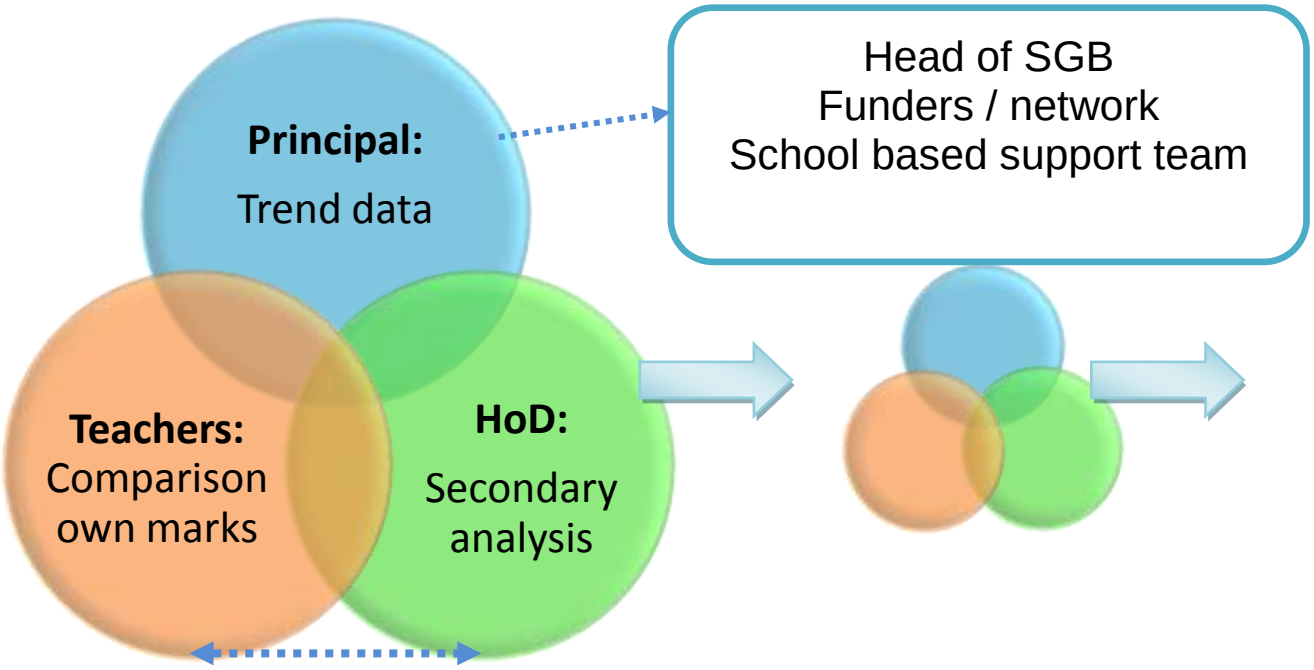


Figure 7.10: School A/E - Team Approach data path

The type of data path observed in School A/E was labelled the ***Team Approach***. The principal (Interview) views this group approach as the most appropriate for his school. *"If I don't drive the process, I don't think the teachers will work with the data to the extent as I wish them to...it is not their natural preference."*

A/E Types of use

In School A/E the data were used to ***support conversations*** between the Grade 1 teachers about individual learners and the school curriculum *"I was concerned about learner X, he did well in your assessments, but struggled in class. So we all [Grade 1 teachers and HoD] sat together and made a plan"* (Interview, Teacher 1). Discussions that are more formal were held with pre-schools in the area to discuss the type of exposure the learners require prior to formal schooling. *"This year we had a meeting with the church pre-school. We talked to them about the skills the Grade 1 learners need for our school and gave them a whole list of tasks they [referring to learners] should be able to fulfil"* (Interview, HoD). Data from the follow-up assessment were also relayed to the Grade 2 teachers to highlight areas in which the Grade 1 learners needed further support: *"… if they [the children] can't do something, the Grade 2 teachers need to know where to start"* (Interview, Teacher 2). The data were used to support requests for further funding and support to the SGB, DoE and potential funders: *"… when I am asking for extra funds for a remedial teacher, occupational therapists, it is something to have in hand"* (Interview, Principal). Where required the data were also used in parent meetings to support teacher evaluations and recommendations. During the observations, the HoD suggested that the teachers use the data to encourage individual learners' parents to become more involved with the learners who were struggling.

The principal and HoD discussed the results from the reports to establish the ***professional development needs*** of the teachers. The data had a direct impact on the ***curriculum development*** for the school's Grade R - Grade 2 classes through the teachers, HoD and SBST (Observations, HoD, Principal and Teachers 1-3)

The principal employed the feedback to meet the ***accountability demands*** to the SGB and the DoE through the mandated IQMS. In School A/E the feedback data were ***triangulated*** with all other assessment data which were available including evaluations from speech therapists and occupational therapists. The data were used to gauge if the assessment standard of the teachers was appropriate and to validate the teachers' identification of

learners who may possibly have failed. *"I used the individual results today to see if I am marking too leniently*" (Journal, Teacher 1). ***Further analysis*** of the data were encouraged in terms of examining trends of the school performance over a number of years and conducting secondary analysis to provide feedback to pre-schools in the intake area of the school. (Observation, agenda and meeting materials)

The data were used for formal ***goal setting*** for individual learners and the school. Measurable goals were set in terms of achieving gains as well as achieving a minimum final score. *"We work for that 10% gain. It motivates us through the year"* (Interview, HoD). The school was concerned with maintaining a high standard relative to other schools with similar characteristics in the sample. The principal was therefore able to ***monitor*** both the gains of learners and performance of the teachers in achieving the goals set in the meetings.

II. SCHOOL E

School E was situated in an area with a pre-dominantly Indian population. Over the previous few years, the characteristics of the school had changed and a number of African learners had started to commute to the school from the township areas. The LOLT in the school was still English, but the majority of the learners were now African and dozens of different home-languages represented in Grade 1.

The school principal was committed to the improvement and further education of his staff, with even the tea-lady involved in tertiary education. He not only encouraged staff to participate in the professional development programme by the DoE, but also arranged for private training opportunities. At the time, the Grade 1 teachers were using a new programme called 'Sheltered Instruction Observation Protocol' (SIOP) to focus on language development throughout all the learning areas to improve learning.

The main challenge facing the school was language development of the learners, most of whom were not first language English learners. As Teacher 3 (Interview) explained: *"You will find all 11 official languages in any class in the*

school and a few extra for a bonus". There was also a high mobility rate of staff as the teachers were often 'head-hunted' by more affluent schools after they have completed their additional training and studies. Parental involvement in the school was limited.

E Data path

The principal took a strong interest in the feedback from SAMP, but rarely attended the feedback sessions himself. Mostly all the Grade 1 teachers, the HoD and sometimes teachers from Grades R, 2 and 3 attended. A formal path for the data in the school was in place referred to here as the ***Cascade Approach*** (see Figure 7.11). The first step was a meeting between the principal and HoD about the feedback. Areas of concern were discussed along with areas of strength and potential improvement. Secondly, the HoD presented the data at a formal meeting with all teachers from Grade R to Grade 3. The principal insisted on all the teachers being involved.

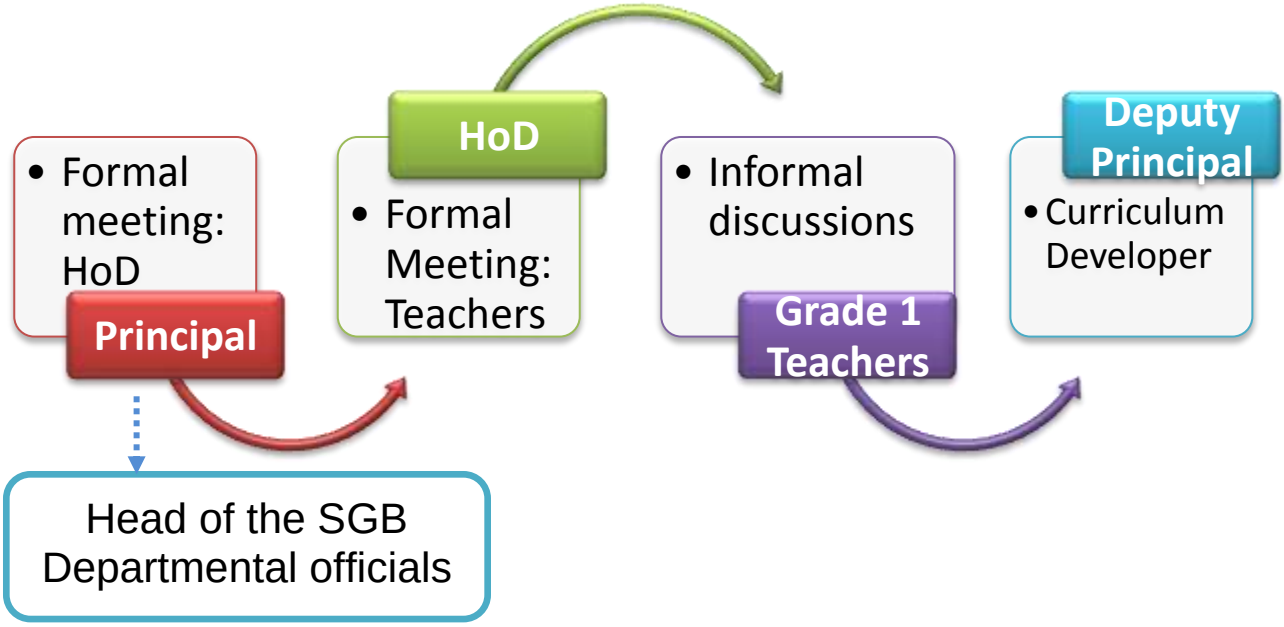


Figure 7.11: School E – Cascade Approach data path

Thirdly, the Grade 1 teachers continued the discussions, mostly informally, about individual learners and changes to the curriculum. The teachers also focused on evaluating whether the new SIOP intervention was proving effective. The curriculum planning for the following year was aligned with the activities recommended in the feedback.

Finally, the data were kept in the deputy principal's office for teachers to access. The Deputy Principal was responsible for curriculum development and integrated the recommendations into the curriculum planning for the following year. The principal (Interview) impressed on his teachers the importance of working with the data, but did not take control of the process: *"I don't get involved with the HoD's meetings with the teachers. It is development for the HoD to interpret the report"*. He did however use the report to report to the SGB and DoE officials to motivate for extra support and funding for the school.

E Types of use

In School E the data were used to ***support conversations*** between the Grade 1 teachers about the efficacy of any new activities, learners in need of support and possible adjustments to the curriculum. *"It is important for us to share what activities are working or not"* (Interview, Teacher 1). The data were used to encourage communication between teachers from Grade R to Grade 3 to facilitate an alignment of goals for the school and coordinate curriculum planning. *"… [A]ll the Foundation Phase and Grade R teachers meet about the feedback, because they will all see these children somewhere down the line."* (Interview, Principal). Data were used to report on the school to the SGB and to garner additional funding from external funders and the DoE. Data were also used upon occasion in parental discussion as an external validation of teacher evaluations and recommendations. "*Sometimes the parents won't believe us that their child is struggling. Then we can show them the marks and say look this was done scientifically by the university, it is not just in our tests that he is struggling"* (Interview, Teacher 2)

The principal and HoD discussed the results from the reports to establish the ***professional development needs*** of the school. Based on discussions, private and DoE training opportunities were identified to address the needs and additional funding was sought if necessary. The principal also saw the process of working with the data as a professional development opportunity for his staff and therefore supported his HoD in interpreting the data during his meeting with her. These data also underwent ***further analysis*** to establish if the SIOP intervention was having an impact on the learners: *"It was good to*

see that the vocab. results increased so considerably, it seems as if the SIOP is working" (Observation, HoD)

These data had a direct impact on the ***curriculum development*** for the whole school through the Curriculum Developer (deputy principal). *"The reports definitely get used… eventually they end up with our deputy principal for curriculum development"* (Interview, Principal). A 15-minute school-wide daily reading period was introduced, based in part on the data from the SAMP feedback. The aim of the reading period was to improve learner literacy across the school. The curriculum development was also impacted directly through the formal teacher meetings of the Grade R- Grade 3 teachers.

The principal employed the SAMP feedback to meet the ***accountability demands*** of the SGB and the DoE through the mandated IQMS. *"See, [shows IQMS file] I even have your documents in my IQMS file" (*Interview, Principal). Data were not viewed in isolation in School E, but ***triangulated*** with classroom assessment data and the principal's classroom observations. The teachers appreciated the opportunity to validate their assessment standards with an external source. This was particularly useful in the difficult task of identifying learners who were at risk of failing half-way through the school year. *"It is difficult to identify the learners, you always wonder… now we can look at the feedback results as back-up"* (Interview, Teacher 3)

The data were also used for formal ***goal*** setting, to evaluate the success of actions based on it. Measurable goals were set in terms of achieving gains as well as achieving a minimum final score. *"The overall score is higher than last year. The score on the Rhyming Words subtest is worrying. The gain is smaller than last year. We said we wanted to increase the gain."* (Observation, HoD). The school was also concerned with maintaining a high standard relative to other schools with similar characteristics in the sample. The principal was therefore able to ***monitor*** both the gains of learners and performance of the teachers in achieving the goals set in the meetings.

III. SCHOOL S

School S was situated in a township area. The LOLT was Sepedi. Learners were predominantly from the immediate area. The socio-economic status of the area was very low and many of the parents were unemployed and generally fairly young.

The school principal was committed to ensuring the school runs smoothly and that the school was an asset to the community. The school was sensitive to the plight of the community and often provide food parcels to hungry families.

The school was involved in dealing with the social problems and poverty the children faced in the home environment. The teachers had a low level of training that the principal was trying to address through professional development activities from the DoE. Parental involvement in the school was poor and learners had little support in the domestic environment.

S Data path

All the Grade 1 teachers attend and participated in the feedback sessions. The principal took responsibility for the use of the feedback and was also usually in attendance. The principal read and interpreted the reports for the teachers: *"I summarise it and tell the teachers what the report says …informally in the hallways or on class visits, also in the meeting after we receive the reports."* This ***Top-Down approach*** is illustrated in Figure 7.12. She also communicated directly to the Grade R and Grade 2 teachers about the feedback as applicable to them. Teachers discussed individual learners and specific suggested activities amongst each other, informally. The Grade 1 teachers mainly examined the report in terms of individual learner results and the conclusion section with the suggested activities.

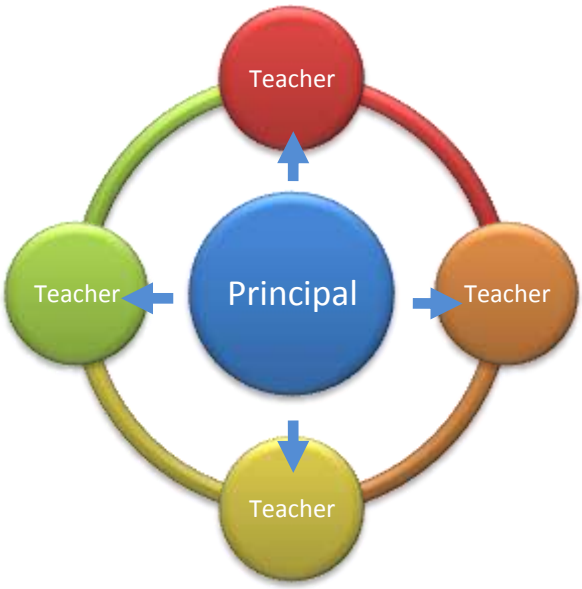


Figure 7.12: School S – Top-down Approach data path

S Types of use

In School S the data were used to ***support conversations*** between the Grade 1 teachers about the various suggested activities, learners in need of support or extra stimulation and possible adjustments to the curriculum. *"We haven't tried these activities [points to suggested phonics activities in report] this may help with the phonics problem, we can try some rap songs"* (Principal, Observation). The data were sometimes used to support conversations with parents about learners experiencing problems or at risk of failure. *"The other day one of the grandfathers wouldn't believe his grandchild was failing, he was giving the teacher a real tough time. Once she showed him the marks from you [referring to SAMP] test, he believed her"* (Principal, Interview).

The principal interpreted the data and explained to the Grade R and Grade 1 teachers what ***curriculum development*** was required. She then also monitored to see if the changes were taking place at classroom level. *"I am in and out of classes all the time, talking to the teachers and seeing if they are doing what we talked about"* (Principal, Interview).

The principal supported the teachers in using the data to ***triangulate*** with their own classroom assessment standards. In this way the teachers could establish if they are marking at an appropriate level. The data were also

compared to the learners who were identified to the DoE as being at risk of failure.

The principal facilitated formal ***goal-setting***, operationalised in terms of gains, relative achievement to other schools and minimum final results in the feedback reports. *"As long as we are showing a gain, I am happy"* (Principal, Observation). These goals made it possible for the principal to ***monitor*** learner gains and teacher performance. The goals also served as a motivational factor for the teachers. *"Just look how happy they are when they hear the results"* (Principal, Interview).

7.1.2.7 Discussion and Design Guidelines

The focus of this chapter was predominantly on how data from the feedback system are used in the schools. Brinko (1993) suggests that when designing a feedback system the following be borne in mind:

- Gathering from multiple sources, by oneself as well as by others.
- Information should be seen as accurate, credible, well-intentioned, descriptive and specific and so more likely to be effective.
- A variety of modes should be used to feed back information.
- Feedback should be seen as a process and not a 'quick-fix' then feedback would be more effective.
- Participants should be part of the process and select the way in which feedback is conveyed.
- Negative feedback is more effective when it is sandwiched between positive information and is self-referenced rather than norm-referenced.
- An opportunity should be provided for response and interaction.

In this research these elements have been an important point of departure and have been successfully implemented. Clearly, the concept of use is difficult to untangle as there seems to be evidence of overlapping of different types of use depending on the purpose. The idea of adoption implementation in which the dissemination of data, evaluation of applicability and incorporating the data

into practice (Brown & Rodger, 1999) is used, is clearly illustrated by the three case studies. While the three schools used three very different approaches to data-use , all however used the data for multiple purposes, as illustrated in Table 7.4 (For a full discussion on use of feedback please refer back to Section 3.4).

Three distinct approaches to data-use that appear to be effective were identified and explored in this cycle: Team, Cascade and Top-down. The most appropriate and effective approach of use may depend on the culture of the school, school leadership approach, level of teacher development, context and current level of functioning of the school. A more advanced, sophisticated approach to data-use may not always lead to improvements, but may be disheartening and inappropriate in a certain context.

There are, however, certain commonalities in the approached to effective data-use illustrated above. In all cases the principals valued and emphasised the importance of data-based practise and planning. Formal time and space was created to work with the data. Multiple role players were involved in the data analysis, interpretation and application process, from teachers to HoDs and principals. Target-setting was used to motivate teachers and monitor progress in the schools. School data were never viewed in isolation, but interpreted in light of other sources through triangulation. In all cases the data were used to facilitate conversations about the curriculum and individualised support with role players such as other teachers from different grades, parents, the SGB and the DoE. Feedback was also provided with links to support material to provide a stepping-stone to action. From the case studies it appears that an effective feedback system should thus try to establish or encourage these conditions for data-use. Data must also be provided in such a manner that it can meet the needs of different schools at various levels of data-use sophistication.

Table 7.4: Summary of schools use of the SAMP data

USES		School A/E  Team	School E  Cascade	School S  Top-down
Supporting conversations	Teachers:			
	Grade R/Pre-school	×	×	×
	Grade 1	×	×	×
	Grade 2	×	×	×
	Grade 3		×	
	School Governing Body	×	×	
	Departmental officials		×	
	Professional development providers	×	×	
	Funders	×	×	×
	Parents	×	×	×
Professional development	Increasing data-literacy	×	×	
	Identifying training needs	×	×	
Curriculum development and planning	Grade R	×	×	×
	Grade 1	×	×	×
	Grade 2	×	×	
	Whole School	×		
	Curriculum developer		×	
	School Based support team	×		
Meeting accountability demands	IQMS	×	×	
	SGB	×	×	
Triangulation	Own assessment standards	×	×	×
	Possible failure identification	×	×	×
	Other data	×		
Further analysis	Evaluation of interventions		×	
	Secondary analysis	×		
	Trend data	×		
Goal setting	Gains	×	×	×
	Final results	×	×	×
	Relative	×	×	×
Monitoring	Teacher performance	×	×	×
	Learner gains	×	×	×

Design guidelines from Report Evaluation Questionnaire

The design guidelines for the report component of the feedback system were collected through an evaluation questionnaire that compared the functioning of the 2008 and 2009 reports. The following design guidelines were generated from the data.

1. ***Improved turnaround time is important*** in increasing the relevance, usefulness and efficacy of the feedback. This may be accomplished by employing ***ICT tools*** to decrease turnaround time through automation of certain processes.
2. ***Feedback must be linked with resources and suggestions for action***, the presence of links to support material facilitate the use of feedback. Resources, however, do not ***need not be developed anew***, as collecting and providing access to available resources in an organised, centralised manner is sufficient.
3. ***Schools are interested in secondary and additional analysis*** as indicated in their request for the addition of variables in the analyses. Schools can be provided with tools to conduct their own additional analyses and therefore additional analyses need not be conducted externally. If ***electronic datasets*** are provided in a commonly used package, ***schools can conduct additional analyses independently***.

Design guidelines from Case Studies

The observations, journals and interviews conducted for the three case studies provided a deeper understanding of how schools use data. The data were employed to construct design guidelines on how to facilitate use of the feedback data in schools:

1. The feedback system should have an ***underlying rationale*** and design that solidifies the link between understanding the feedback and emphasising the importance of ***data-based practise and planning. Links to resources*** and support materials are essential to facilitate action and emphasise this rationale.

2. The system should be designed in such a way that the ***minimum time is spent on understanding*** the data, to allow users to spend time on planning and taking action based on the feedback.
3. The feedback system should allow for ***target-setting*** and a way to ***monitor*** progress in attaining the goals.
4. The system should ***encourage triangulation*** of data, by acknowledging the limitations of a single method of data collection and acknowledging the importance of other modes.
5. Feedback must be easily ***linked to the curriculum*** to facilitate conversations, planning and action.
6. Data must be ***differential and detailed*** enough to be practical for a variety of purposes, as schools need to use the data in a variety of contexts.
7. Data must be ***presented in different manners*** and levels of sophistication to be of use to schools that may be at different levels of development and data-literacy. ***Providing a dataset*** that can easily be used for secondary and additional analysis is essential to fulfil the needs of schools which are more data-literate.

7.2 Conclusion

In this chapter the last cycle of the Prototyping Phase of the design research process was documented. The emphasis of the cycle was on transforming the conditions of use into action in schools. This was achieved by examining the current use and processes employed by schools in planning and taking action based on the feedback system. Three different approaches to data paths were identified: Team, Cascade and Top-down. The design guidelines from this cycle informed the development of the fourth and final prototype, Prototype IV to be documented in the next chapter. The next chapter therefore focuses on the final phase in this thesis, namely the Assessment Phase that examined the overall functioning of all the components as a complete system.

CHAPTER EIGHT
Assessment Phase: Cycle 4

> [A feedback Intervention that] provided for a familiar task containing cues that support learning, attract attention to feedback-standard discrepancies at the task level and is void of cues… that direct attention to the self …is likely to yield impressive gains. (Kluger & DeNisi, 1996, p. 278)

This chapter takes a closer look at the research design and results for the final design cycle. This last cycle is described as the Assessment Phase (Plomp, 2009) of the design research process. This phase examines the functioning of the elements of the feedback system, as well as the global functioning of the integrated learner performance monitoring feedback system. The Assessment Phase is discussed with reference to the specific research questions and evaluative foci, Prototype IV, the research design, findings and design principles from the phase.

8.1 Research Cycles

Figure 8.1 demonstrates the design and evaluation interactions for this research in detail. The pre-existing system and feedback prototypes are illustrated in blue and the evaluation activities are illustrated in green. As stated previously, every full design cycle consists of the prototype adaptation followed by implementation and corresponding formative evaluation of that prototype. The Assessment Phase consists of the final design cycles in this research. The previous cycles are discussed in Chapters 5-7.

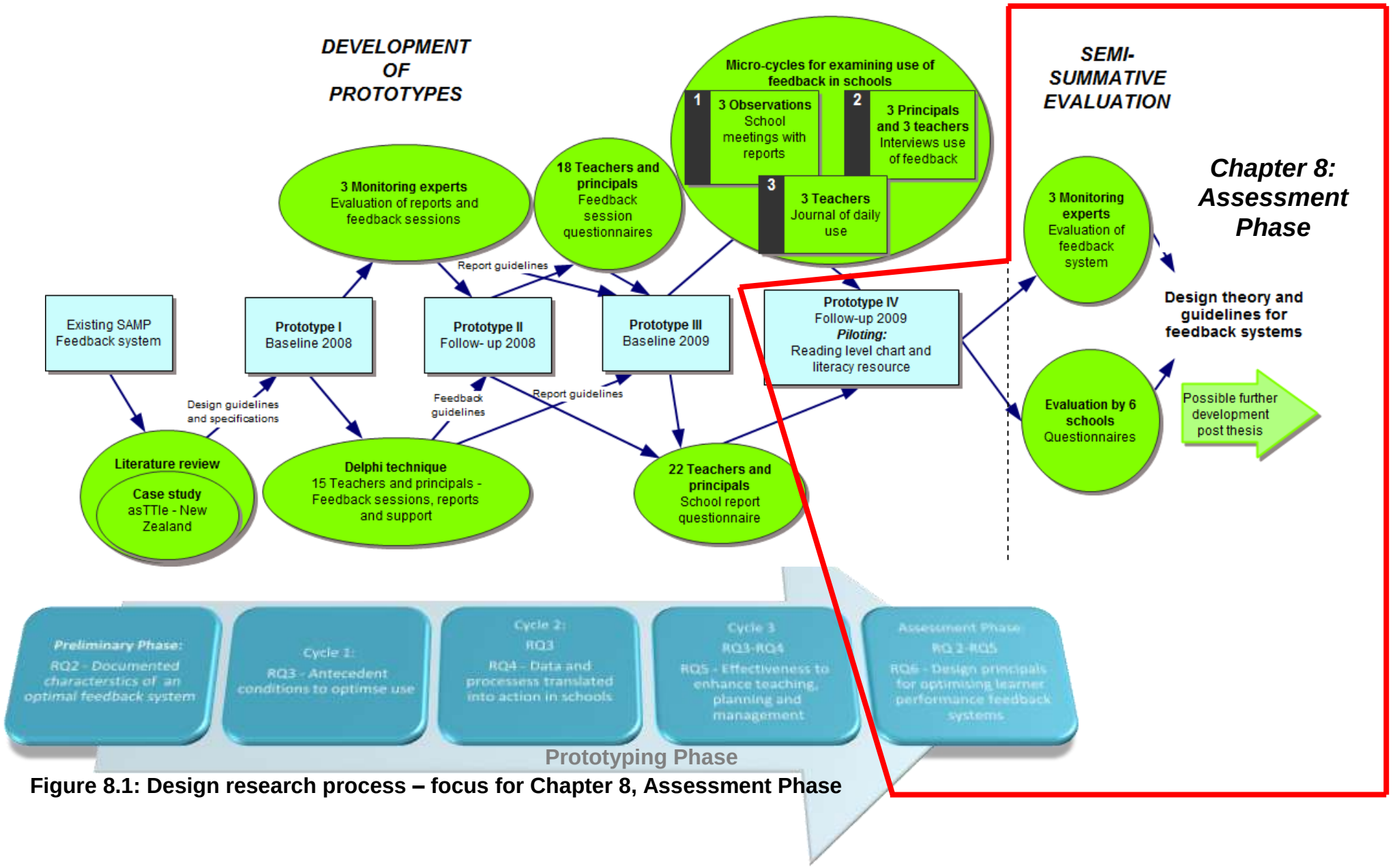


Figure 8.1: Design research process – focus for Chapter 8, Assessment Phase

8.2 Cycle 4 (Prototype IV – Follow-up 2009)

The final cycle incorporated the learning from all the previous cycles in order to evaluate the functioning of the feedback system as a whole. It therefore consists of a semi-summative evaluation (Plomp, 2009) of Prototype IV. The evaluation was conducted by means of reports from expert evaluators, a questionnaire for teachers and a questionnaire for school management.

This cycle focused on ***research questions*** 3-5:

3. *What pre-existing conditions need to be established in the feedback system to facilitate the use of the learner performance feedback system?*
4. *How do schools use feedback?*
5. *How effective is the feedback system in enhancing classroom practices, management and planning activities?* ***(focussing on expected and expressed efficacy)***

The evaluation information served to provide ***design guidelines*** relating to the development of a functioning feedback system that facilitates use of the feedback.

4. Completed intervention: This stage was aimed at assessing the functioning of the system as a whole and was achieved through the semi-summative evaluation of Prototype IV. In this evaluation, all components were evaluated along with the interaction of the components and their functioning as a whole.

The evaluation in this cycle focused specifically on the ***evaluative foci*** of practicality and efficacy:

3(a) *Expected practicality:* The system as a whole is expected to be usable in the settings for which it has been designed and developed, i.e. schools in the Tshwane area. Therefore, the focus is on whether the overall feedback system is understandable and helpful for the schools in informing action.

3(b) *Actual practicality:* The actual practicality, relates to how accessible, understandable and usable the system is for the school environment it was designed. This was examined through the participants reports of the practicality of the feedback system in their setting.

4(a) *Expected efficacy:* Using the system is expected to result in the desired outcome of helping users to take action and plan for improvement on the individual, classroom and school level. The expected efficacy focuses on whether the users perceive and expect the feedback system to achieve this outcome.

4(b) *Actual efficacy:* The actual efficacy of the feedback system was also explored but only to a limited extent. Teachers and management respondents provided information on how effective they found the system for planning and action in schools. Actual efficacy of the feedback system was examined through observations, interviews and journals in Chapter 7 and the users' views of the actual efficacy are examined in this chapter through the questionnaires. In order to establish actual efficacy fully, causal relationships between the feedback system and changes in the learner results would have to be established. This exploration was not part of the design.

In the following section, Prototype IV of the feedback system, as it was developed and implemented in the final cycle is introduced.

8.2.1 Prototype IV – Follow-up 2009

The sample of 22 schools (Afrikaans, English and Sepedi) was maintained for the follow-up 2009 assessment. Therefore, 1,569 Grade 1 learners from the baseline assessment were assessed in the follow-up for 2009. There was a drop out rate of 7.7%, due largely to learner absenteeism and migration. All these schools participated in the feedback system.

All the schools in the sample received paper-based reports, that were delivered prior to the feedback session. The report and instrument manual formed separate resources, which maintained the format used in the baseline. Teachers, principals and HoDs were invited to attend the feedback session. Schools were also invited to contact the CEA if there were any questions or any help and support were needed with interpretation and planning. At the feedback session each school received a DVD or CD (electronic resource) containing freely available literacy, phonics, numeracy and mathematics materials. The DVD/CD also contained an electronic copy of the specific school's report as well as an *Excel* dataset for the school to use

for further analysis. The electronic resource was further supplemented with the launch of a support website, which contained the same, as well as additional resources to those on the DVD. The website could be accessed by schools, parents and learners alike. The components of Prototype IV are shown in Table 8.1.

Table 8.1: Prototype IV – Follow-up 2009 components

Component	Description
Paper-based follow-up report	Produced for each school individually and delivered to each school a week before the feedback session
Paper-based instrument manual	Delivered to schools with report
Follow-up feedback session	Principals and teachers from all participating schools invited to the University of Pretoria
Electronic resource	Electronic collection of literacy, phonics, numeracy and mathematics materials produced on CD/DVD and provided to each school at the feedback session. Included an electronic copy of the report (PDF) with a learner dataset for the school in *Excel*
Website	Links and electronic resources for literacy, phonics, numeracy and mathematics. More extensive than electronic resources with web-access for schools, parents and learners.
Telephonic, written and face-to-face communication	On an ad hoc basis as required

The changes to the various components of the feedback system are discussed in the following sections.

8.2.1.1 Reports

The follow-up report reflected the structural changes of the baseline report. The adapted structure of the reports was as follows:

1. Introduction to the SAMP project
2. Results per school ***(updated)***
3. Individual results (category scores)
    a. Notes on interpretation
    b. Learner results table
    c. Learners at risk
    d. Exceptional learners
4. Conclusion and recommendations
5. Individual results (percentage scores)

The content and structure of the reports remained the same from the baseline to the follow-up with a particular focus on facilitating interpretation and use. The results per school were aimed mainly at a management and curriculum level for schools to examine their overall performance. The comparison to other schools also allowed schools to examine their relative progress and determine specific areas which were problematic across the grade for curriculum planning. The individual result section helped identify learner strengths and weaknesses, thus facilitating differential teaching practices. The conclusions summarised and interpreted the overall data for each school with concrete examples of activities that would be appropriate to address the areas of concern.

The turnaround time for report delivery was improved by expanding and refining the automation process from the baseline assessment. The automation process also influenced the representation style of the graphs. The number of bars on the graphs was reduced to three, with only the school averages for 2009 and 2008 as well as the language group average for 2008 being reproduced (see Figure 8.2). This is different from the 2008 reports in which the results for each school were presented by bars in these graphs. This new representation style had the added benefit of making it easier for schools to compare their scores over a two-year period to examine any trends.

By presenting comparative data, the reports contributed to the enlightenment of schools about the functioning of schools in the Tshwane area. The different presentations of the data provided an opportunity for the users to improve their data-literacy. The specific conclusions and recommendations provided modelling of how schools can interpret data and use it in schools, thus providing an opportunity for process use of the data.

A stack bar graph was used to show gains and losses on each of the bars for items that remained consistent from the baseline to the follow-up assessment (see Figure 8.2). The gains score provided a clearer picture of the value added by schools than outcome scores alone. The baseline score for 2009 was therefore represented in green and the gains or losses added in pink. The presentation style of the graphs was also updated with the *2007 Office* package to have a more professional appearance. The vertical axis was also pre-set to a scale of 0-100 to ensure consistency throughout the report.

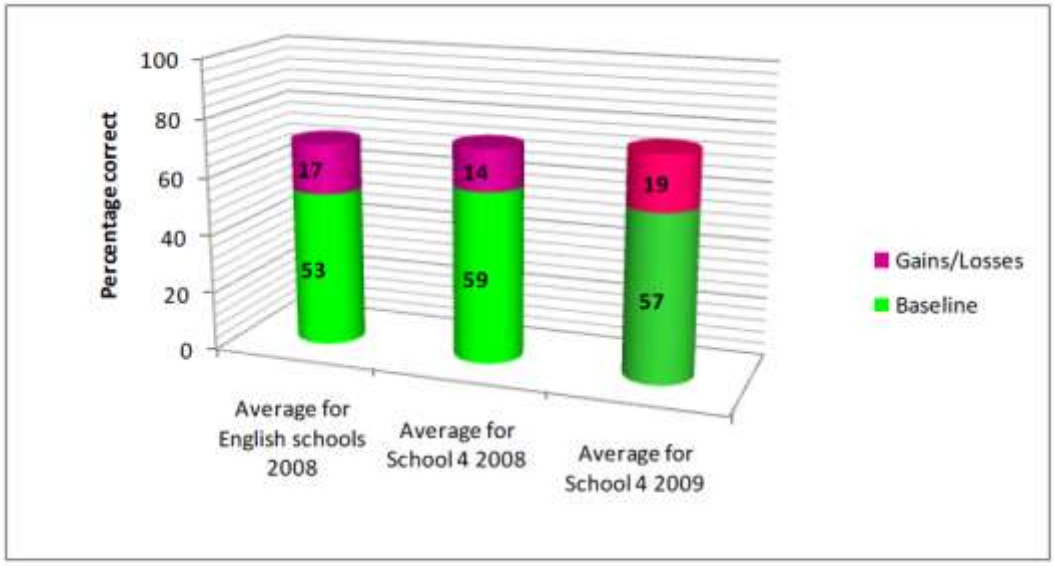


Figure 2: Difference in performance on all items that remained consistent from the Baseline to the Follow-up assessment compared with 2008 data – English Medium of instruction[2]

Figure 8.2: Difference on all items that remained the same from Baseline to Follow-up – Prototype IV

The report was also saved as a PDF document. The electronic version of the report was saved on the electronic resource for each school to allow printing of extra full colour reports if required. Schools could also make use of the report in electronic format as bookmarks were inserted for point-and-click navigation.

8.2.1.2 Instrument Manuals

All the schools in the sample received a separate instrument manual delivered with the reports. The instrument manual format from the baseline assessment was maintained, with added explanations for interpretation of the new follow-up graphs. The structure for the instrument manual was:

1. Introduction
2. Description of baseline subtests
3. Description of follow-up subtest
4. Description of the English Additional Language Assessment
5. Quality of Data
    a. Validity
    b. Reliability
6. Notes on Interpretation ***(expanded)***
    a. Assessment results for the school overall

   b. Individual learner results
   c. Conclusion
7. Summary
8. References

The instrument manuals not only provided tools to interpret the data in the reports, but through the examples and explanations increased the user's data-literacy through conceptual learning. As the instrument manuals provided support for interpreting and using the data, they helped make it more feasible for schools to act on the data, thus influencing the process of feasibility testing as discussed in the conceptual framework.

The format of the follow-up feedback session was similar to that of the baseline. The feedback session is discussed below.

8.2.1.3 Feedback Sessions

All schools were invited to attend the feedback session and had received the reports prior to the session. At the session each school received an electronic resource and data reference sheet for the 2009 follow-up. This showed the school comparative data for 2009 that were not covered in the reports (see Figure 7.7). The feedback sessions took one hour and consisted of a presentation by the project leader, followed by an introduction to the website. This was followed by a certificate presentation to the participating schools by one of our Dutch partners. This feedback session was very well attended with 20 of the 22 schools represented and more than 43 staff members from the schools in attendance. The feedback session pertained to:

- A short introduction to the project
- Developments in 2009 ***(new)***
- A overall description of the assessment
- Presenting the new report format
- An example of how to make sense of the data in the new format
    - Linking interpretation to action and planning ***(new)***
- Introducing the website ***(new)***
- An opportunity for discussion and questions

- Certificate ceremony ***(new)***

Handouts of the presentation were provided along with the 2009 follow-up data sheets and refreshments were served. The data sheets were compiled from the comparative data for all the schools for the baseline assessment in 2009 (see Figure 8.3). The comparative data were presented for each of the scales. The sheets supplemented the data from the reports that examined the school results in comparison with the previous year's results. Each school received a data sheet printed back-to-back and laminated.

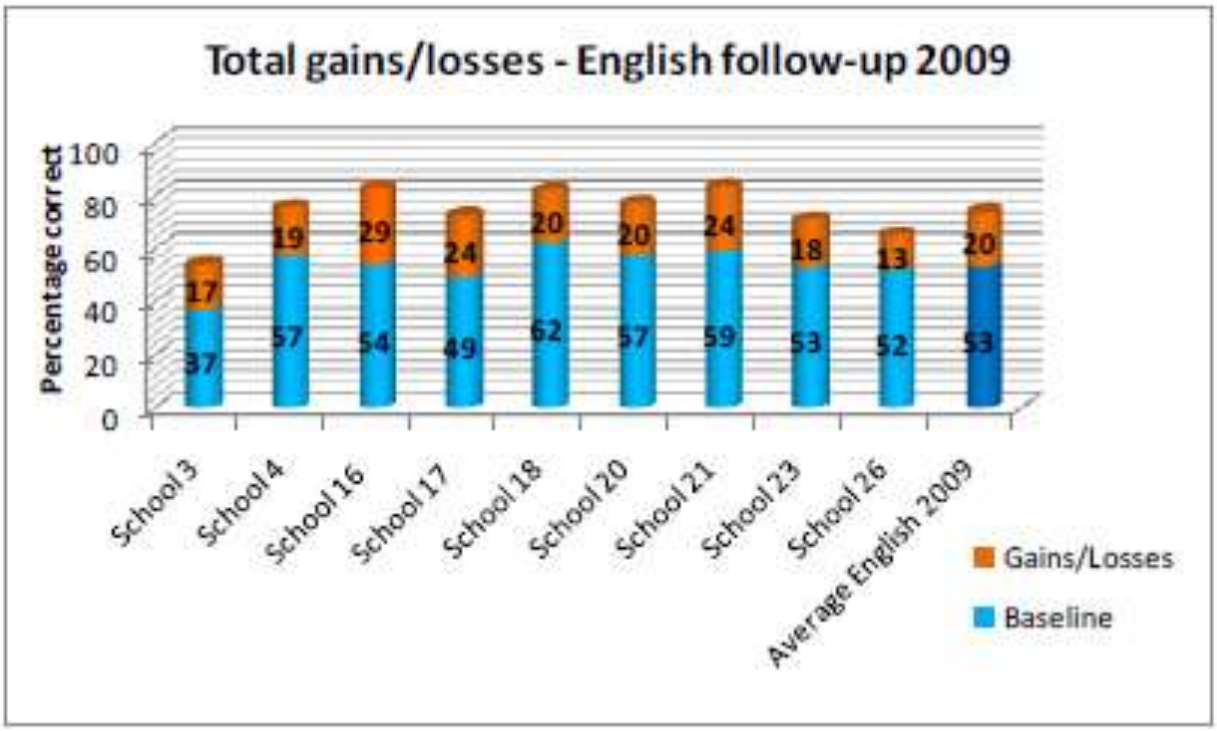


Figure 8.3: Datasheet Excerpt – Prototype IV

The structure of and approach to the feedback sessions provided a valuable opportunity to strengthen the relationship flux characteristics. The two-way communication and reporting of progress as well as discussion of future plans showed a respect of the schools' data users, acknowledging the role of the users as full participants and encouraging a sense of ownership. Where the feedback on the planning and progress reflected user input has been incorporated, sense of ownership was further strengthened. Careful attention to logistical matters and the manner of addressing the school users provided an opportunity for showing respect for the participants and building trust. Support and discussions on how to interpret and use the data helped to improve the users' data-literacy and therefore their ability

to use the data instrumentally. At the same time, the feedback session provided an opportunity for schools to network with each other and form a community of users who can provide support and share experiences. These aspects could however only be accomplished because of the non-judgemental, constructive atmosphere established at this and previous sessions. Feedback sessions provided support and feedback in a manner that did not threaten any school and invited collaboration and participation.

8.2.1.4 Website

The support website (www.samp.schools@officelive.com) was developed to supplement the electronic resource DVD/CDs for schools. The website (see Figure 8.4) has additional resources updated regularly by the CEA staff. The website also has links to other resource sites, downloadable games, classroom and printable resources. It has sections introducing the project and the CEA as well as quick links to contact the CEA staff or to access support for the website.

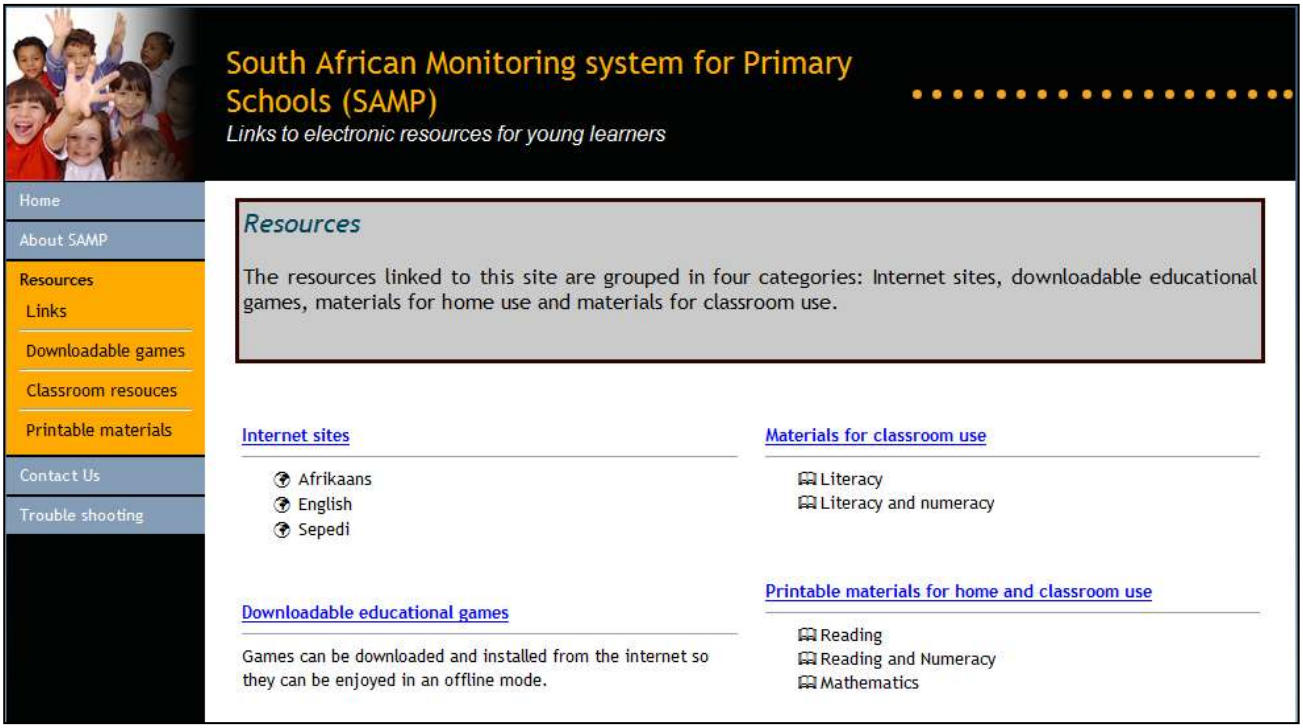


Figure 8.4: Screenshot of the SAMP resource website

The website was created for learners, guardians and schools. Therefore, schools could refer parents and learners to the website to access resources at home to help support the learning taking place in the school environment. In 2009/2010 the website received 149 unique visitors viewing a collective 626 pages.

The resources from the site made it easier for schools to use the feedback appropriately to address identified issues, thus making it more likely that feedback would pass the feasibility test in order to be used instrumentally. The 24-hour accessibility of the site also allowed the schools to function more autonomously with the feedback and increased their sense of ownership of the process. The site also provided an opportunity for the users to gain enlightenment about the use of ICT resources for classroom practice and planning.

8.2.2 Semi-summative Evaluation of Prototype IV

The semi-summative evaluation of Prototype IV was aimed at examining the functioning of the overall feedback system as a whole. This evaluation was conducted by both expert evaluators and school users. The expert evaluators (Dutch partners introduced in Section 6.1.2.1) were asked to evaluate the overall feedback system and write short evaluation reports. While two separate, comprehensive questionnaires were supplied to each school, one for the teachers and one for the management (principals, HoDs and head teachers). The focus of the questionnaires were to determine how the feedback system as a whole was functioning and is referred to as a semi-summative evaluation as further development of the feedback system may still take place (Plomp, 2009).

8.2.2.1 Sampling

The evaluation reports were completed by the two Dutch experts involved in the research project. Each school in the SAMP project was provided with two questionnaires, one to be completed by a teacher and one to be completed by someone from a management perspective e.g. a principal, HoD, or head teacher. A response analysis was conducted (see Table 8.2) seven English schools, four Afrikaans schools and five Sepedi schools completed the questionnaires. In total 16 of the 22 schools participated in the semi-summative evaluation. A total of 27 individual questionnaires were received: 14 teacher questionnaires and 13 management questionnaires.

Table 8.2: Response rates for the Teacher Questionnaire and the Management Questionnaire

School	Language	Teacher Questionnaire	Management Questionnaire Respondents	
			HoD/Head Gr1 Teacher	Principal
3	English	1	1	-
4	English	-	1	-
6	Afrikaans	-	1	-
7	Sepedi	1	1	-
8	Afrikaans	1	1	-
11	Sepedi	1	-	-
12	Afrikaans	1	-	-
14	Sepedi	2	-	1
16	English	1	-	-
18	English	1	1	1
20	English	1	1	-
21	English	1	1	-
22	Sepedi	1	-	1
23	English	1	1	-
27	Afrikaans	1	-	-
24	Sepedi	-		1
16		**14**	**9**	**4**

8.2.2.2 Data Collection

The two expert evaluators were approached during their visit to the CEA to write an evaluation report. Both evaluators were provided with a full set of reports, manuals, electronic reports, website address, agendas, data sheets and supporting documentation. One of the evaluators also attended and participated in the follow-up feedback session in 2009. The evaluators were requested to evaluate all the different components of the feedback system and provide suggestions for improvement. The evaluators produced two short reports on the feedback system, focussing mainly on suggestions for improvement. This was followed up with the evaluators telephonically and by e-mail. The evaluators indicated that they thought the system was functioning well and that they therefore focused their reports on any further suggestions for improvement.

The two final evaluation questionnaires for teachers and management were designed to address research sub-questions 3-5. Both these questionnaires therefore had sections relating to:

- *Sub-question 3: What pre-existing conditions need to be established in the feedback system to facilitate the use of the learner performance feedback system?*
- *Sub-question 4: How do schools use feedback?*
- *Sub-question 5: How effective is the feedback system in enhancing classroom practices, management and planning activities?*

The teacher questionnaire focused on a classroom perspective, while the management questionnaire held an overall management perspective. The questionnaire consisted of Likert scales with space for comments and open-ended questions (see audit trail DVD).

The two questionnaires were faxed, e-mailed or hand delivered to schools depending on the availability and functioning of the schools' communication infrastructures. Telephonic or face-to-face support was provided by CEA staff (four schools) if there were any difficulties or if the faxes to or from the schools were unclear. Most schools faxed the questionnaires back to the CEA, but four of the questionnaires were collected as the schools had difficulty with their fax lines. Telephonic follow-ups were conducted where responses were unclear. The questionnaires were sent to schools after completion of the 2009 SAMP cycle and after schools had received all materials and attended the feedback session.

8.2.2.3 Data Capturing

The reports from the two evaluation experts were received electronically and stored as such for analysis. Data from the report questionnaires were captured electronically both in textual forms for qualitative analysis and in *Excel* and *SPSS* for descriptive analysis of frequencies. All data sets and outputs are presented on the audit trail DVD.

8.2.2.4 Data Analysis

The data from the expert evaluators' reports were collated and summarised. Descriptive statistics were examined, including the frequencies and mode values. The analysis, including histograms providing an illustration of the frequency distribution of responses are presented in Table 8.3 - Table 8.14. Mean values were also presented for illustrative purposes, although this is not usually the practise with

non-parametric data. The qualitative responses were also grouped according to themes and some selected quotes are represented in the tables for each question or comment on an item.

8.2.2.5 Results and Findings - Expert Evaluators' Reports

The overall evaluation of the feedback system by the Dutch evaluators was positive.

> From the reactions of the representatives of schools, whom I met during this visit, I am convinced that the linked monitoring and feedback system is very relevant for schools and teachers. In other words, the project has laid the fundament of a unique contribution to South African education by developing a good feedback system linked to the school-based monitoring system …SAMP. (Evaluator 1, 2 April 2010)

> The manuals, baseline feedback reports and follow-up feedback reports are generally well structured and well written. They also contain sensible and easily accessible information as this is presented both in writing, in graphics and in numbers. (Evaluator 2, 17 February 2010)

Some comments and recommendations were made about the different aspects of the feedback system in the report by Evaluator 1 (2 April 2010) and Evaluator 2 (17 February 2010). The comments and recommendations related to the assessment themselves, the reports, manuals, electronic resource, website and feedback sessions.

Assessment

The Evaluators (Evaluator 1, 2 April 2010; Evaluator 2, 17 February 2010) noted a ceiling effect on some of the subtests (Ideas about Maths and Counting) in the assessment that were repeated at the follow-up assessment. Both evaluators advocated for the inclusion of more advanced items in the follow-up assessment to address this issue.

Report

Evaluator 2 (17 February 2010) found that the reports were well structured and well written. He felt that the representation of data in writing, graphics and numbers was a powerful method of presentation and increased accessibility. Both evaluators (Evaluator 1, 2 April 2010; Evaluator 2, 17 February 2010) noted that the results in the report were norm referenced as opposed to criterion referenced and suggested that criterion referencing be incorporated in later versions. This could be

accomplished by Rasch Modelling to benchmark the assessments. The benchmarks could then be linked to resources and skills still to be developed to further facilitate ease of use of the feedback.

Evaluator 2 (17 February 2010) also suggested that the introduction be reworked to be more interesting: “A more enthusing intro (with a focus on helping learners) maybe more motivating than an account of the project structure”. It was also suggested that the note that small differences in scores should be interpreted with caution, rather be placed with the first tables, so that it is not missed by the school users when consulting the report (Evaluator 2, 17 February 2010).

Manuals

The Evaluators (Evaluator 1, 2 April 2010; Evaluator 2, 17 February 2010) judged the manuals to be well structured and written. Both Evaluators cautioned though that the writing style might be too academic for teachers. Further evaluation of the manuals by educators was recommended.

Electronic Resource

The evaluators judged the electronic resource to be very useful. Evaluator 2 (17 February 2010) commented on the importance of this resource as it provides access without requiring internet connectivity. Both evaluators commented that the dataset on the CD/DVD was useful in facilitating additional analysis by schools. Both Evaluators (Evaluator1, 2 April 2010; Evaluator2, 17 February 2010) recommended that an ‘autorun’ function be included in the programming of the resource to support less computer-literate users. Evaluator 2 (17 February 2010) commented that this would make the resource more accessible and user-friendly.

Website

> The website is a powerful tool for up-to-date information and making further resources available. It is a welcome addition to the project, as it provides links, materials, games and printable materials. (Evaluator 2, 17 February 2010)

Evaluator 1 (2 April 2010) agreed that the website looked very professional, but suggested that the page “About SAMP” be updated to focus on SAMP as a monitoring system and not just as a CEA project.

Evaluator 2 (17 February 2010) noted that there were only white children represented in the picture graphic in the header of the website. The picture does actually include an Indian and African child, but the comment however indicates that a clearer, more representative image should be sought.

Feedback Session

Evaluator 2 (17 February 2010) expressed that the feedback sessions were important to facilitate use of the manuals and report. This would facilitate use and understanding if the language was too academic. He supported the handing out of certificates at the end of the twice-yearly feedback sessions. Evaluator 1 noted some of his personal observations of attending the 2009 follow-up feedback session:

> It was very nice to hear the representatives of the schools express their enthusiasm and satisfaction with the various components of the feedback system offered to the schools. It was very clear, the schools and the teachers participating in the project experienced the SAMP monitoring and feedback system as an important tool. (Evaluator 1, 2 April 2010)

The expert evaluator report data were supplemented by data from the school users gathered through the evaluation questionnaires. The questionnaire data are discussed in the following sections.

8.2.2.6 Results and Findings - Teachers and Management Questionnaires

The questionnaires begin with the evaluation of the various components and the overall feedback system, followed by a discussion of how the feedback is used and finally the effectiveness of the feedback system is evaluated. Results for both the teacher and management questionnaires are presented in a combined tabular format, so that the results can be compared. The results of the report questionnaire are summarised in Table 8.3 - Table 8.14. Not all comments could be re-produced, so selected comments, which represent the various views expressed, are presented in the tables.

Table 8.3: Evaluation Questionnaire Data Teacher and Management – Background information

Questions	Teachers			Management		
	English	Afrikaans	Sepedi	English	Afrikaans	Sepedi
N	6	3	5	7	2	4
Position (HoD/ Principal if applicable)	.	.	.	HoD: 6 Principal: 1	HoD: 2 Principal: 0	HoD: 1 Principal: 3
Number of years you have been a teacher	13	25	20	.	.	.
Number of years you have been an HoD (if applicable)	.	.	.	5	17	9
Number of years you have been a Principal (if applicable)	.	.	.	5	.	6
Number of years you have been involved in SAMP	4	4	5	4	6	5
Total number of learners in Grade 1 (whole school)	147	143	97	159	149	101
Number of learners in your class	34	30	40	.	.	.
Gender of teacher	Male: 0 Female: 6	Male: 0 Female: 3	Male: 0 Female: 5	Male: 1 Female: 2	Male: 0 Female: 2	Male: 0 Female: 4

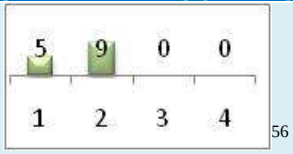
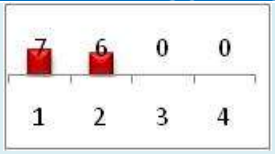
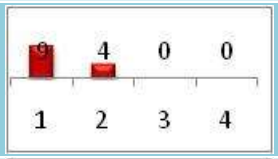
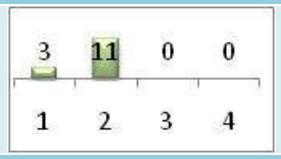
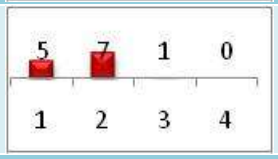
Pre-existing conditions to facilitate use

The various components (including the assessment, report, manual, electronic resource and website) are examined in term of their ability to facilitate use. This is followed by an examination of the overall conditions to facilitate use.

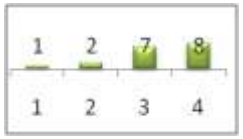
Assessments

The data on the Assessment component of the feedback system are represented in Table 8.4. Management found the assessments less disruptive than teachers did. Teachers who had children removed from their class for assessments experienced the disruption more directly. However, both the teachers and management indicated that the data were important enough to warrant any inconvenience caused by the assessments. The schools also expressed that they trusted that the results were a true reflection of learner abilities. All the participants indicated that their schools would continue participating in the feedback system.

Table 8.4: Frequencies of teacher and management views of the assessment component

Questions	Teachers (N=14)			Management (N=13)		
	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)
Although testing disrupts my class, the information we receive is worth the inconvenience.	1.6	2	 [56]	1.5	1	
My school will continue participating in the project if the assessments are conducted as currently.	-	-	-	1.3	1	
The results from the assessment reflect the learners skills and knowledge accurately.	1.8	2		1.7	2	
Any other comments .	• **Assesses all Grade 1 learners:** Would be very valuable if all the grade one learners can be assessed. Would like to know the skills and knowledge of all the learners in my class when assessed by SAMP. • **Good rapport with fieldworkers:** People are very nice and children feel comfortable at ease with them. • **Discrepancies between school and SAMP results:** At times there is a gap between the results i.e. 1,2,3,4 a learner get from us and from the university. • **Diagnostic value:** The assessments helps you the educators to identify areas of need i.e. where the learners experiences a problem.			• **Assesses all Grade 1 learners:** All learners should be tested, not only a certain number. • **Good rapport with fieldworkers:** They are very helpful and nice to work with sympathetic towards the children. • **Discrepancies between school and SAMP results:** There were some confusions with results from the assessment, as some outstanding learners who experienced problems received high results. • **Consider additional variables:** Please take into account our learners/social/ emotional backgrounds when doing comparisons.		

[56] The numbers below the X-axis: 1,2,3,4 represents the different categories on the scale, 1=Strongly Agree; 2=Agree; 3=Disagree; 4=Strongly Disagree. The numbers above the X-axis represent the frequency of responses for each category. In this example, eight respondents rated this aspect as 4, or Strongly Disagree. Please also note that, not all respondents answered all questions.



Under the general comments, the teachers and management both noted that they would appreciate it if all learners in the school could be assessed, and not only a limited number. Schools noted that the rapport between the children and fieldworkers was good. Some teachers mentioned the assessment's diagnostic value in identifying areas of need, while one principal asked that additional background and demographic variables be considered in the data analysis.

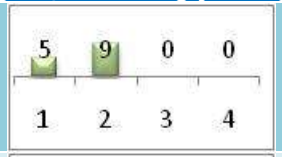
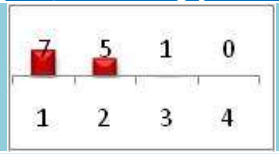
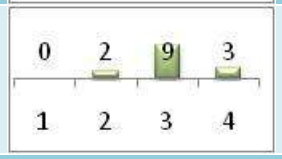
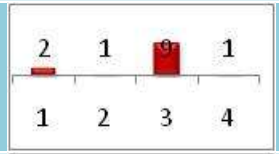
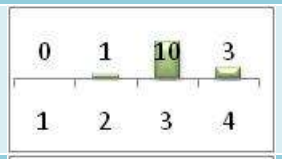
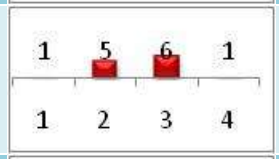
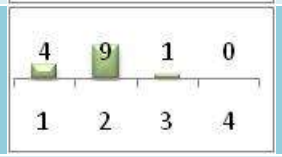
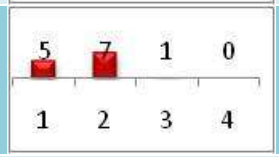
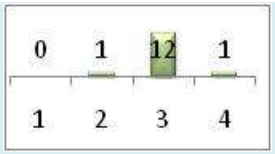
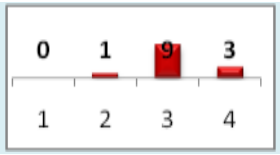
Some schools indicated that there were sometimes discrepancies between SAMP and school results. These discrepancies are to be expected as some learners may perform more poorly on the assessments if they struggled with the novel testing situation or to build rapport with the fieldworker. In other cases, learners may have performed better in the testing than in the class if they for instance have difficulty working in a group context or have unidentified hearing or vision problems. These comments however highlighted the importance of discussing why discrepancies may arise in the feedback sessions and providing information on this phenomenon in the instrument manuals.

Reports

The results of the evaluation of the report component of the feedback system (both the electronic and bound reports) are presented in Table 8.5. Reports contributed to the teaching roles of the teachers in the schools and the results represented in the reports were seen as trustworthy. The reports were seen as helpful for identifying areas of improvement and the turn-around time between assessment and reporting was judged appropriate to ensure that the data were still relevant for practise and planning.

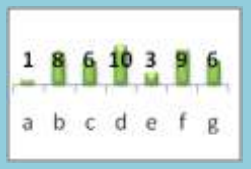
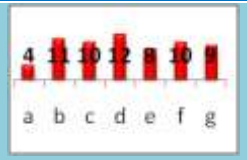
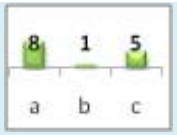
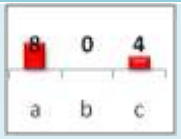
Although all the participants indicated, they could easily access the reports the management found this easier than the teachers. This is probably because reports are usually kept by the principals, HoDs and head teachers and teachers usually have to ask the management for access. It was interesting to see that the management did not see the reports as contributing to their leadership, only to teaching. It seems that the management participants did not see curriculum planning as part of their leadership role.

Table 8.5: Frequencies of teacher and management views of the report component (bound and electronic)

Questions	Teachers(N=14)			Management (N=13)			
	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)	Comments
I can easily get hold of my school's report if I need it.	1.6	2		1.5	1		I keep the records
The reports do not contribute to my teaching. (*)	3.1	3		.	.	-	-
The reports do not contribute to my leadership. (*)	-	-	-	2.7	3		Its not about leadership but teaching.
I often disagree with the information I find in the reports. (*)	3.1	3		2.5	3		Individual results. | Seldom
The reports help me to identify areas for improvement.	1.8	2		1.7	2		Interesting to see wether I assessed my children correctly.
The writing of reports takes too long, the information is no longer relevant when I receive it. (*)	3	3		3.2	3		No problem.

* Items stated in the negative in the questionnaire

(Table 8.5 – Continued)

Questions	Teachers	Management
Which parts of the report do you use the most and why? (a) introduction (b) overall school results in table form (c) overall school results per scale and subtest (d) individual learner results table (e) histograms of learner performance (f) identification of weak and strong learners (g) the summary and recommendations	 • **Monitoring of progress:** To know learners progress (Performance) • **Examining individual learner results**: … we definitely also look at individual learner performance. | …also for intervention and development. • **Identifying areas for improvement:** We want to improve the standard of Grade 1. | Helps me identify areas of need.| … for developmental purposes • **Grouping of learners:** To assist learners with similar challenges. • **Monitoring standards:** *Om hoe standaard te stel sodat prestasie van leerders goed vergelyk met skole in die ooste van Pretoria.*[57] |Compare with performance in class. | It is good to see what school made compared to other schools… • **Reporting needs:** Principal would like to see how our learners perform interesting to compare our findings to SAMP.	 • **Monitoring of progress:** Gives me an idea of learners progression from the initial tests. • **Identifying areas for improvement:** The manual and report help me to identify the area of development and strategies that we can use to help those who need assistance. | Gives background of school performance, able to identify areas which need improvement. • **Examining individual learner results**: Learners who need help-enrichment and comparing with other schools. • **Providing additional data for communication**: Helps me to comprehensively inform parents about learners needs and recommendations also when I fill in 450 support forms for the learner. • **Examining overall performance:** To get the overall performance of learners | All information received is absolutely important to understand performance of learners in school. • **Quality of reports**: Good/ comprehensive report.
Do you use the electronic report on the (a)DVD/CD (b)paper-based (c) both?	 • **CD/DVD**: I use DVD/CD report. It is straight to the point and user-friendly. • **Paper-based:** Paper-based: It is always at hand to use as reference. | Paper-based report is faster, when you want to use it in the classroom. (don't need a computer etc.) also use DVD/CD.	 • **Both**: Both paper-based and DVD/CD. I use the paper report to compare to previous years. • **Paper-based:** Paper-based report as it is easily accessible. Don't always have a computer available. | … grade educators meet in classroom, no computer available and saves time.

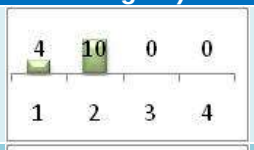
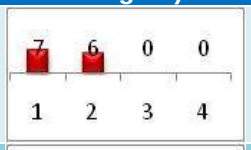
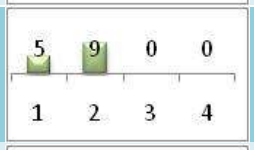
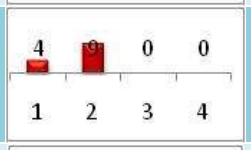
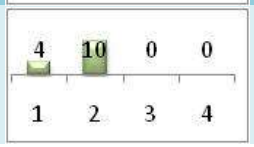
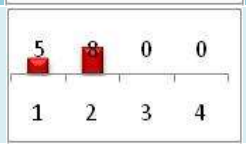
[57] English translation: *To set high standards, so that learners compare well to other schools in the east of Pretoria (more affluent part of Pretoria).*

Manuals

For teachers the individual learner results table, identification of weak and strong learners and overall school results in table form were the most utilised portions of the reports. The same three areas were of importance to the management participants, although the graphical representation of scale and sub-test results were consulted more often by managers than teachers. This seems to indicate that both teachers and management consult the overall school results from a curriculum perspective and the individual learner results to focus on individual cases. The management participants, however seemed to examine the overall school results in greater depth than the teachers who are mainly concerned with the overall relative performance of the school against others. The paper-based report was still noted as the preferred reporting style, but a third of the participants indicated that both the paper-based and electronic reports were utilised. The most significant limiting factor for use of the electronic reports was low levels of access to computers in the classroom.

The results of the items on the manual component of the feedback system are represented in Table 8.6. Both teachers and management respondents indicated that the manual was easily accessible in their particular school environment, although management participants again found it easier to access manuals as they usually kept the original reports and manuals with them. Manuals were judged useful in making sense of the data and rated as useful in planning and taking action to improve learning in the schools.

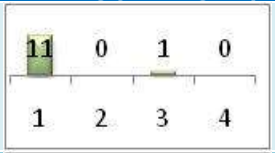
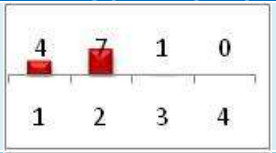
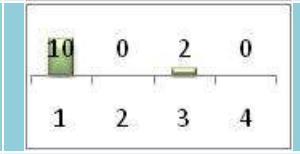
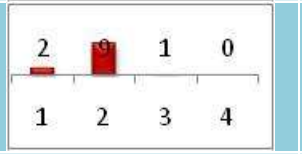
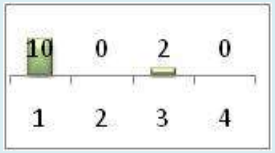
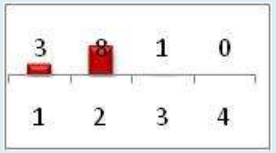
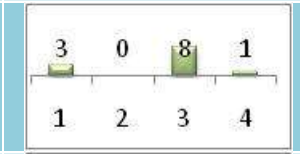
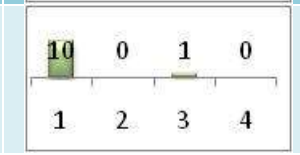
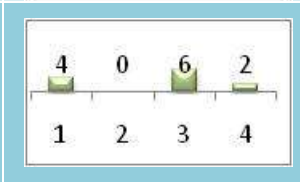
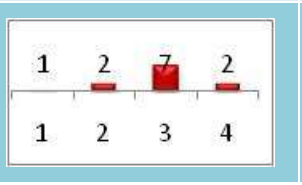
Table 8.6: Frequencies of teacher and management views of the manual component

Questions	Teachers (N=14)			Management (N=13)		
	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)
I can easily get hold of my school's manual if I need it.	1.7	2		1.5	1	
The information in the manual helps me to plan and take action to help learners to learn.	1.6	2		1.7	2	
The manual helps me to make sense of the information in the report.	1.7	2		1.6	2	

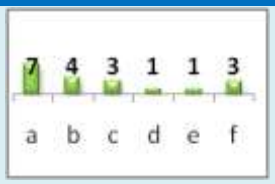
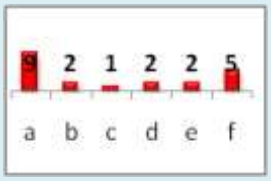
Electronic Resources

Table 8.7 illustrates the questionnaire results relating to the electronic resource provided at feedback sessions. Schools generally found the electronic resource accessible, although it was often kept by one person and not used by all staff. Unlike with the manuals and reports it would seem that one of the teachers usually kept the resource, which meant it was a bit harder for the management to access. Schools found that the resources were appropriate for their learners and the support materials were useful in helping to address areas of concern noted in the reports. Teachers found the resources more appropriate and useful than management, probably as resources are aimed at a classroom and not management level. In most cases, schools had however not passed on the resources to parents for home use and most schools had not employed the dataset for additional analysis. The printable materials were the preferred material on the electronic resource, although management staff indicated that they also accessed the electronic reports and manuals. Schools found the material child-friendly and appropriate. Respondents indicated that they did not have any suggestions for changes to the electronic resource, although some of the Sepedi resources were noted to be problematic in terms of spelling or translation.

Table 8.7: Frequencies of teacher and management views of the electronic resource component (CD/DVD)

Questions	Teachers (N=14)				Management (N=13)			
	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)	Representative Comments	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)	Representative Comments
I can easily get hold of my school's CD/DVD if I need it.	1.2	1		Did not receive it. | Do not have a DVD drive. | Not yet utilised	1.8	2		Have not used it I have found it somebody else had it.
The CD/DVD provides resources that are useful for teaching and learning.	1.3	1			1.9	2		
The resources provided on the CD/DVD help me to address the areas of concern mentioned in the reports.	1.3	1			1.8	2		
I have provided information or resources from the CD/DVD to parents or caregivers to use at home.	2.6	3		Not Yet. | Most parents do not have computers.	-	-	-	
The resources from the CD/DVD help learners in my class.	1.2	1		Not used as yet.	-	-	-	
I use the excel spreadsheet on the CD/DVD with my learners marks to do further analysis.	2.5	3		All the teachers do not have computers and are not computer literate!!	2.8	3		Not yet. | Do own assessment.

(Table 8.7 – Continued)

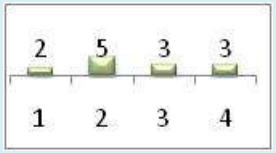
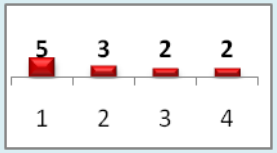
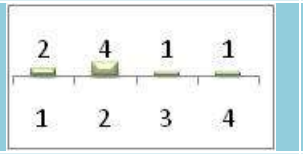
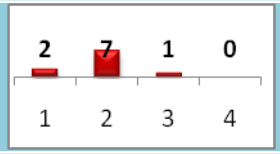
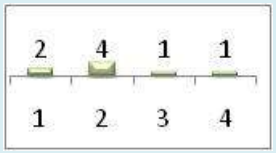
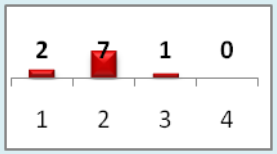
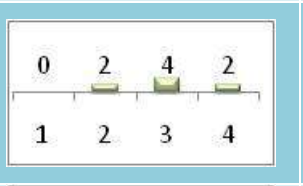
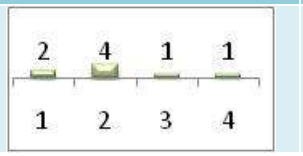
Questions	Teachers	Management
Which parts of the CD/DVD do you find the most useful? (a) printable materials for classroom use (b) printable materials for parents (c) electronic games (d) links to website resources (e) the electronic dataset (f) the electronic report and manual	 • **Classroom planning and use:** For lesson plan and remedial purposes. | The material can be used in the classroom. • **Distribution for home use:** They are easily accessible and to distribute to parents. • **Appropriate and attractive material:** *Leersaam en kindvriendelik.*[58] | The learners learn fast by seeing what to do.	 • **Appropriate and attractive material:** Attractive to learners. Learners enjoy working with them. • **Classroom planning and use:**| Able to use in the classroom. | Good ideas. • **User-friendly:** It is user friendly and provides valid activities and information.
Is there anything you would like to change about the CD/DVD?	No | Do not use the above-don't have time for that! We have too much school work !!!	No | Some spelling from CD (Pedi) they are not correctly spelled or translated.

Website

The questionnaire data relating to the website component of the feedback system are represented in Table 8.8. Accessibility to the website was problematic for many of the schools. In many cases, schools did not have internet access due to failure of the Gauteng online project of the DoE. In other cases, the cost of internet connectivity and limited computer-literacy were concerns. Schools judged the website content as appropriate and helpful to learners as well as to teachers for addressing areas of concern. Few schools had however provided details of the website to parents and caregivers.

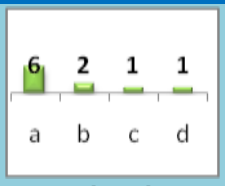
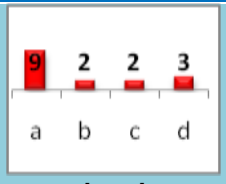
[58] English translation: *Educational and child-friendly.*

Table 8.8: Frequencies of teacher and management views of the website component

Questions	Teachers (N=14)				Management (N=13)			
	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)	Comments	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)	Comments
I am able to access the website.	2.5	2		Have not used it. | Not that computer literate. | Internet costly- person. Gauteng Online offline. | Do not have access to computer.	2.1	1		Have not used | Internet is very costly. Experiencing problems with Gauteng on line. Had to view using personal computer at home.
Resources provided on the website are appropriate for my class /school.	2.1	2			1.9	2		
The resources provided on the website helps me/the teachers to address the areas of concern mentioned in the reports.	2.1	2			2.0	2		Relevant.
I have provided information or resources from the website to parents or caregivers to use at home.	3.0	3		*Sal in 2de kwartaal deurgee aan ouers.*[59] | Not yet.	-	-	-	
The resources from the website help learners in my class.	2.1	2			-	-	-	

[59]English translation: *Will provide it to parents in the second term.*

(Table 8.8 – Continued)

Questions	Teachers	Management
Which parts of the website do you use the most? (a) printable materials for classroom use (b) printable materials for parents (c) electronic games (d) links to other website resources	 • **Classroom planning and use:** To use it together with the preparation - file & lesson planned for a day. | Adds to class resources • **Appropriate and attractive material:** *Kleurvol, kindvriendelik. Goeie hulpmiddel om les aanskoulik te maak.*[60] • **Difficulty with IT:** Internet not accessible. | It is difficult to use games as we don't have computers in the classrooms.	 • **Classroom planning and use:** • **Appropriate and attractive material:** They are on par with learner developmental level. They motivate learners, they enjoy working with them. |Material is easy and interesting for learners. • **Difficulty with IT:** Not using the Website as internet is not accessible. • **Integration with computer classes:** Good ideas. Games-computer centre.
Is the anything you would like to change about website or resources?	No | I am working on my computer skills and hope I will be able to access the Website soon. | Carry on we'll catch up.	No | Not at all.

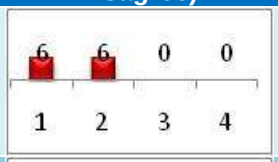
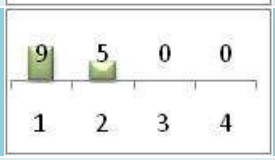
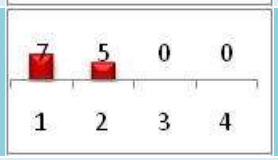
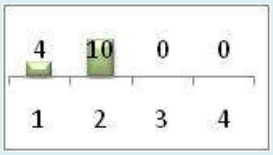
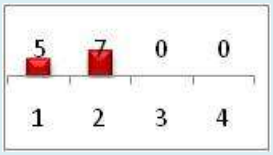
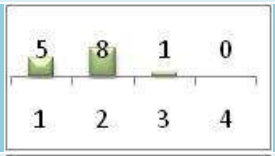
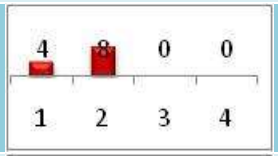
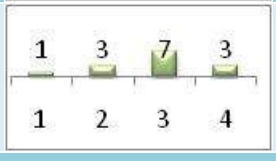
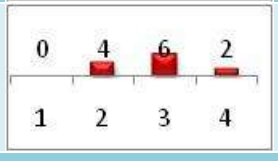
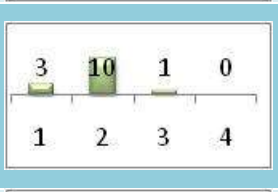
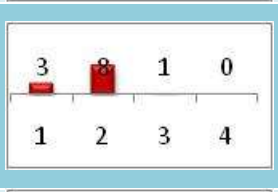
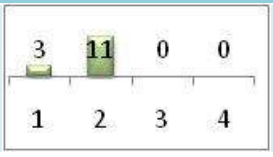
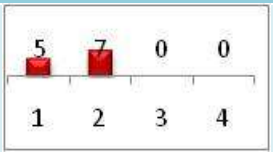
It seems that the management staff found it easier to access the website than teachers. This may be due to the fact that most schools have computers available for administration, computers for teaching and learning may not be available. The printable materials section on the website was the most used portion of the website as was the case with the electronic resource. Some schools noted, however, that the games could easily be integrated into existing computer classes. Schools commented that they would not like any changes to the website. Some teachers indicated that the schools were busy improving on their IT infrastructure and that they were working on improving their computer-literacy.

[60] English translation: *Colourful and child-friendly. Good support materials to make lessons more attractive.*

Feedback sessions

Table 8.9 relates to the data on the feedback session component of the questionnaire. The feedback sessions were deemed well-organised and presented. Schools experienced feedback sessions as helpful in interpreting the data and planning for improvement. Schools indicated that their questions and concerns were addressed appropriately in the feedback sessions. The participants indicated that it was possible for them to attend the sessions without too much inconvenience, although some principals noted that they sometimes sent a proxy in their stead.

Table 8.9: Frequencies of teacher and management views of the feedback session component

Questions	Teachers (N=14)			Management (N=13)		
	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)	Mean	Mode	Frequency distribution (1= Strongly Agree; 2= Agree; 3= Disagree; 4= Strongly Disagree)
The feedback sessions are well-organised.	1.4	1		1.5	1.5	
The feedback sessions are well-presented.	1.4	1		1.4	1	
My questions and concerns are addressed adequately during the feedback sessions	1.7	2		1.6	2	
The feedback sessions help me to use the reports and materials	1.7	2		1.7	2	
It is not possible for me to attend the feedback sessions without difficulty.(*)	2.9	3		2.8	3	
I enjoy having the opportunity to have discussions with teachers or principals from other schools at the sessions.	1.9	2		1.8	2	
My questions are addressed appropriately at the feedback sessions.	1.8	2		1.6	2	

(Table 8.9 – Continued)

Questions	Teachers	Management
Is there anything you would like to change about feedback sessions?	• **No changes:** Very good, organised. • **School visits:** How about visiting schools for feedback so that you get the in-depth feedback from teachers. • **Catering:** Yes. Cater for Halaal please.	• **No changes:** No, it to the point and very good. Organised. • **School visits:** If possible how about visiting individual schools for feedback so that you address each school report in isolation. • **Catering:** Yes. Please cater for Halaal.
What is your overall impression of the feedback sessions?	• **Generally positive evaluation:** Excellent | Very good. • **Worthwhile:** It is worth attending and helpful for my school's feed back. • **Professional:** *Uiters professioneel en opsommend*[61]. | Well-organised and well-presented. | Well-presented and informative • **Appropriate and concise:** To the point no waffle, knowledgeable people and relaxed atmosphere. • **Atmosphere and interaction:** Well planned, relaxed atmosphere. | Active participation and interaction with other educators at other schools i.e. learning from them.	• **Generally positive evaluation:** Good| Excellent • **Professional:** Well prepared. | Professionally organised • **Appropriate and concise:** It is super and short to the point not time consuming. |Information and well-organised. • **Atmosphere and interaction:** A very informative, well presented and interactive atmosphere.

* Items stated in the negative in the questionnaire

The feedback sessions were received very positively and perceived as being worthwhile. Both teachers and management indicated that the sessions were conducted professionally, considered appropriate to their needs, concise and presented in a relaxed atmosphere that encouraged collaboration. Most schools did not express a need for changes to the feedback sessions, although a suggestion for individualised feedback at each school was made. Some of the schools asked that the catering be expanded to include Halaal meals.

Overall conditions

A number of open-ended questions were used to gather information on the overall conditions required to facilitate use of the feedback system. The questions and selected comments according to themes are presented in Table 8.10.

[61] English translation: *Very professional and concise.*

Table 8.10: Open-ended questions on teacher and management views about overall conditions required for use of the feedback

Questions	Teachers	Management
How would you improve the feedback system?	• **Parental involvement:** Involve parents. • **No improvement required:** It's fine. | *Terugvoersisteem is uitstekend!* | No need to improve. • **Improve turnaround time:** Get feedback on time	• **Parental involvement:** Involving parents… • **No improvement required:** So far so good| No need to improve. • **Professional development:** … train educators.
What do you think of the facilitation of the SAMP feedback system?	• **Generally positive evaluation:** Very good…| Good |Baie goed![62] | Excellent • **Professional:** … professionally well done. | Very professional! • **Knowledgeable and dynamic:** Research team knowledgeable and dynamic • **Constructive**: It is fruitful and constructive. • **Logistically proficient:** Well-organised.	• **Generally positive evaluation:** It is well done. | Good | Very good | Fair • **Knowledgeable and dynamic:** Value-added research team is superb and dynamic, as they are constantly trying to acquire new developments and facilitate with excellence. • **Logistically proficient:** It is well-organised. • **Motivating:** Good and motivational

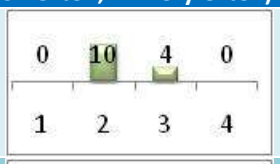
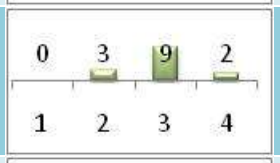
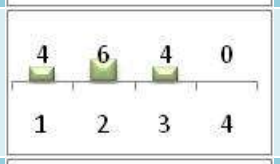
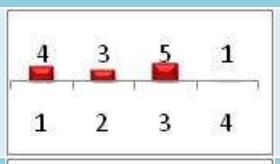
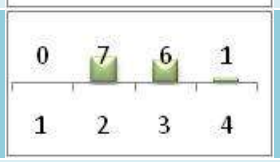
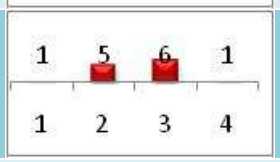
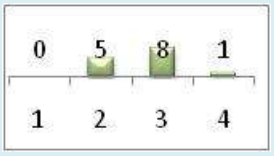
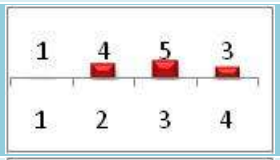
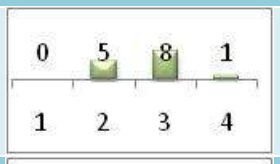
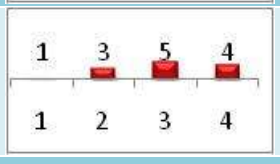
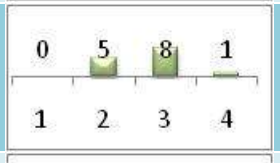
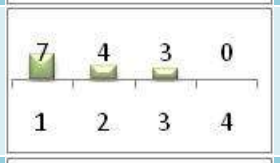
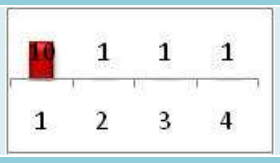
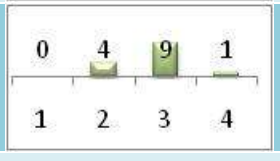
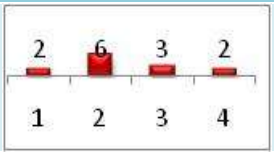
Teachers and managers generally felt that no improvement of the overall feedback system was required. Some teachers and management noted that involving parents would improve the feedback system, while one teacher asked for further improved turnaround time. Some of the management staff suggested additional professional development for teachers to use the feedback.

How schools use feedback

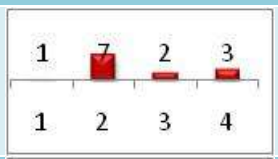
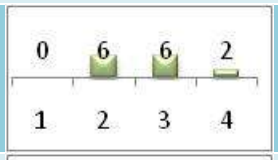
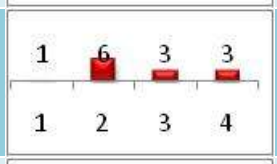
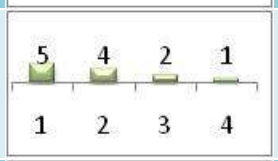
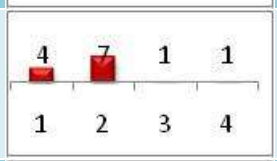
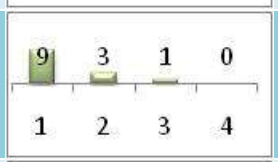
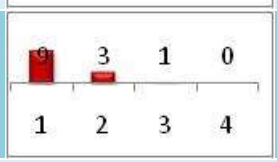
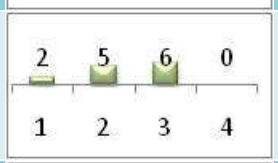
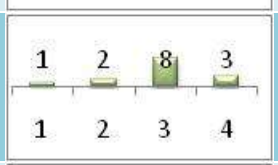
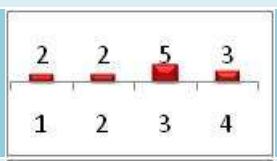
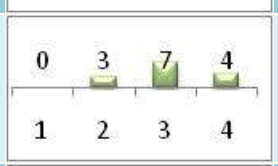
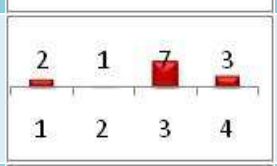
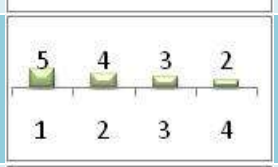
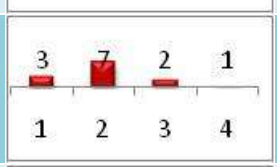
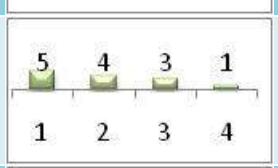
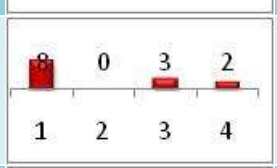
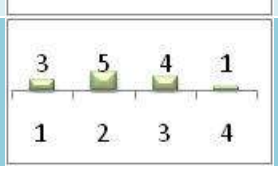
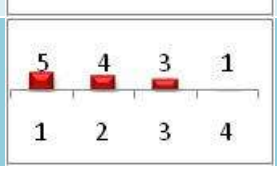
The different types of use made of the feedback system are noted in Table 8.11. All types of noted uses were to some extent employed by the schools. Teachers were less likely to use the data for the state mandated Internal Quality Management System (IQMS) and fundraising activities than management, as the IQMS forms part of the management function in schools. The teachers used the data most often for the purposes of self-directed learning, motivation of themselves and the learners, decision-making about learners, understanding aspects of their own teaching, professional development and comparing with their own standards of assessment. Management often used the feedback to inform school level policy, for planning purposes, to motivate teachers, and decision-making about learners, aspects which relate closely to the management function.

[62] English translation: *Very good.*

Table 8.11: Frequencies of teacher and management use of feedback

Questions	Teachers (N=14)			Management (N=13)		
	Mean	Mode	Frequency distribution (1= Never; 2= Sometimes; 3= Often; 4= Very Often)	Mean	Mode	Frequency distribution 1= Never; 2= Sometimes; 3= Often; 4= Very Often)
for instructional purposes.	2.3	2		.	.	
for self-directed learning (to help learners understand what they need to learn).	2.9	3		.	.	
to inform policy at the school-level.	2.0	2		2.2	3	
for planning purposes at the school.	2.6	2		2.5	3	
to motivate yourself and the learners	2.7	3		.	.	-
to motivate teachers	.	.	-	2.8	3	
for decision-making about learners.	2.7	3		2.9	3	
to understand aspects of my teaching	2.7	3		-	-	-
to assist in fund raising activities	1.7	1		1.5	1	
for my own professional development.	2.8	3		.	.	-
to further the professional development of the teachers.	.	.	-	2.4	2	

(Table 8.11 – Continued)

Questions	Teachers (N=14)			Management (N=13)		
	Mean	Mode	Frequency distribution (1= Never; 2= Sometimes; 3= Often; 4= Very Often)	Mean	Mode	Frequency distribution 1= Never; 2= Sometimes; 3= Often; 4= Very Often)
to compare with my own learner assessments	2.8	3		-	-	-
to compare with the teachers' standard of assessment.	-	-	-	2.5	2	
for internal monitoring of standards.	2.7	2.5		2.6	2	
as documentation for the Internal Quality Management System (IQMS)	1.9	1		1.9	2	
for discussions with : (a) district officials	1.4	1		1.4	1	
(b) the principal	2.3	3		-	-	-
(c) the foundation phase HoD	2.9	3		2.8	3	
(d) other Grade 1 teachers	3.1	3		2.9	3	
(e) teachers from other grades	2.1	1		2.1	2	
(f) pre-school	2.0	1		1.9	1	
(g) parents	2.2	2		2.0	1	

(Table 8.11 – Continued)

Questions	Teachers (N=14)			Management (N=13)		
	Mean	Mode	Frequency distribution (1= Never; 2= Sometimes; 3= Often; 4= Very Often)	Mean	Mode	Frequency distribution 1= Never; 2= Sometimes; 3= Often; 4= Very Often)
(h) Other, please specify: (n=1)	3.0	3.0	Specialists: school nurses, support educators, adopt- a- cop etc.	.	.	-

The feedback was regularly used to support communication, although rarely for discussions with district officials and the pre-school. The feedback was most often employed to support conversations with the principal, the foundation phase HoD and other Grade 1 teachers. Teachers used the feedback for conversations with parents more often than mangers, possibly as the teachers have more regular contact with parents. Management used the feedback to converse with teachers from other grades more often than the Grade 1 teachers did, as the feedback was used for a more holistic curriculum planning approach in these cases.

Further information about the use of feedback in the schools was collected through the general open-ended questions (see Table 8.12). Schools indicated that they felt they had contributed to the development of the feedback system. Both teachers and school management added that they contributed by taking responsibility for school improvement based on the data, sharing experiences and learning at the feedback sessions and recommending the project to other schools. The management users indicated that the schools also contributed through participation in evaluations and providing suggestions for improvement, as well as by being open and receptive to the feedback. From these answers it seems clear that the users felt a sense of ownership in the development process which increased the schools' receptiveness for the feedback.

Table 8.12: Open-ended questions on teacher and management views about use of the feedback

Questions	Teachers	Management
What do you think your contribution has been to the development of the feedback system? Please explain.	• **School improvement:** Improve teaching strategies. • **Sharing learning at feedback sessions:** To talk to other teachers about the standard and problem areas. | Sharing information as well as ideas. • **Recommending project:** Meer skole in sekere area te betrek. (names two schools in their area) ook nou deel van SAMP**.** [63] • **Logistical support:** To provide the learners for the tests.	• **School improvement:** Improving knowledge of teaching and learning. • **Sharing learning at feedback sessions:** Sharing of information during discussions ... |Sharing of experiences of learners difficulties. • **Recommending project:** Word of mouth| To talk to other teachers and schools. • **Attitude and receptiveness:** Open and positive about the feedback. • **Participating in evaluations and providing suggestions:** Giving feedback with experiences both positive and negative.
What other information do you take into consideration when you look at the feedback?	• **International results:** … international test results (through news reports) • **National results:** national… test results (through news reports) • **Own assessment:** … assessments in class| Mainly own assessments. • **Own experience: …** my own experience • **Additional variables:** Learners' background (Family and social issues) Parents' - level of education.| Own information regarding 5 year old turning 6 by the beginning of June. • **Data from other teachers:** … remedial class. • **Data from support practitioners:** O.T reports| I compare the reports with reports I have received from occupational therapists, speech therapists educational psychologists, etc. • **Comparative data:** We considered the level of our school with other school, the way of answering questions and speed when writing.| Own evaluation in relation to the university evaluation.	• **National results:** National Results… • **Own assessment:** Own assessments…| The information usually is in line with observations I do in the class about the learners and thus assures me of my decisions about learners performance… • **Additional variables:** In cases where the results are totally opposite to my observation, I would usually look at contextual factors that may have been an influence| Home circumstances, emotional state when tests are done, age of child. • **Data from other teachers:** …discussions with others. • **Data from support practitioners:** … occupational therapist reports, speech therapists reports. O.T. reports. • **DoE accountability data: …** 450 support information
What makes it difficult to use the feedback in your school?	• **Parental involvement:** Lack of parental involvement. • **IT infrastructure:** No electronic resources. • **Not all learners assessed:** Only 80 Grade 1's are tested. • **Computer-literacy:** I still struggle with the internet thing. • **Work load:** Time frame | Because of load of work … | Time.	• **IT infrastructure:** Lack of electronic resources. • **Not all learners assessed:** Because only 80 out 200 Grade 1's are tested. • **Work load:** Time. | Sometimes there are lot of school activities that need our attention we do not follow as we wish. | No time to get all educators together to use CD/DVD, as educators have to attend workshops, meeting, etc. • **No difficulties:** Nothing

[63] English translation: *More schools (names two schools in their area) now also part of SAMP.*

(Table 8.12 – Continued)

Questions	Teachers	Management
What helps you to use the feedback in your school?	***Characteristics of the feedback system:*** • **Overall integrated feedback system:** Everything • **Curriculum linkage:** Adapt the curriculum. • **Comparative component:** To compare our children. • **Recommendations:** Suggested activities in the manual. • **Differential and diagnostic data:** *Prestasies van leerders in elke leararea*.[64] • **Individual learner results:** Information on learners' performances. • **Structure and organisation of data:** Well organised makes it easier to present to others. • **Various presentations of data:** Graphs and percentages to show growth or areas of need. ***School-based actions:*** • **Meetings with other educators:** Meeting with other educators especially foundation phase educators. | It is helpful to sit as a panel of grade 1 educators and to discuss the results.	***Characteristics of the feedback system:*** • **Comparative component:** The comparison between our school and others is so clearly depicted …|… assessing the standard of the our school with other schools. • **Recommendations:** Suggested areas to work on-group and individual. • **Differential and diagnostic data:** Able to use the feedback to see which learners we can extend and which ones we need to remediate| For assessment, recording, reporting and identification. • **Various presentations of data:** Most of the words, sentences. Repeats: this helps in reinforcement and for those teachers needing support ***School-based actions:*** • **Motivation of educators:** Motivating educators • **School level planning:** The feedback is usually considered when we start at the beginning of the year, to identify areas that need more attention in Grade 1. • **Professional development:** I would then say it helps to inform the development of my teaching, methods and content. | To inform educators about new development e.g. CD/DVD. As well as suggested activities.
How do you decide which information in the feedback to act on?	• **Individual learner needs:** By looking at the learners' results and decide who needs support and referral and which area needs more attention | Problem areas and great achievers. | Areas waarin learders nie so good presteer het nie.[65] • **Meetings about data:** We have a face (sic) meeting with the principal and HoD to discuss areas of concern, then pick the most common ones. | Grade meeting • **Comparison to own data**: If something stands out, e.g. an exceptionally poor mark for a child, it stand out as something that needs to be acted on. The same for gifted child who needs more stimulation . • **Use all information:** All information Reading and spelling. • **Identified problem areas:** The problems are looked into.	• **Individual learner needs:** Look at weak children | Histograms of learner performance, individual learner results/ score. Helps to provide enrichment for high flyers and intervention and support for under achievers. • **Meetings about data:** Coming together foundation phase HoD and Grade 1 educators analysing the report and agreeing. • **Comparison to own data:** I look at the learners who have been referred and compare them with the report to see if they appear as support learners as well. • **Use all information:** Group and individual performance. • **Identified problem areas:** Areas that show a particular need for intervention e.g. maths… • **Relevance to context:** I look at the relevance of the information. | Taking all factors into consideration. • **Trend data for school:** Check report on results SAMP follow-up assessment … check … if we have improved or not. • **Comparison to other schools:** Check report on results SAMP follow-up assessment compare with other schools … • **Recommendation and conclusions:** Positives or negatives on the feedback are worth acting on. It is either to commended on good work or encourage improvements where necessary

[64] English translation: *Achievement of learners in every learning area.*
[65] English translation: *Areas in which the learners did not achieve so well.*

Although schools expressed that they found the data valid and trustworthy, they applied triangulation of data including use of own assessments, data from other educators, national and international assessments and data from other sources. Schools were incorporating the feedback data into their already existing knowledge base through a process of enlightenment prior to making decisions, planning and taking action. Although a variety of data were considered, the decision of which data to act on was made through collaborative processes of reasonability testing and feasibility testing. Reasonability testing took place by examining how the data compared to own and other assessment Once the data were deemed reasonable, feasibility took place by examining the relevance to the context and employing the identified problem areas and recommendations to see which areas should be addressed first with the school's resource pool of time, money and expertise.

Schools noted certain characteristics in the school environment which complicated use of the feedback including lack of parental involvement, poor ITC infrastructure and computer-literacy, as well as the heavy workloads limiting time to engage with the feedback. Schools also found the sampling of only a set number of learners for the monitoring a hindering factor.

The general question section re-affirmed the positive evaluation of the feedback system from the previous sections. The schools noted both characteristics of the feedback system and in the schools, which facilitated the use of the data:

- the overall congruence of the various elements of the feedback system,
- the diagnostic, differential nature of the data
- the comparative components and individual learner results
- the clear structure of the reporting materials with the multiple presentations of data.

For the teachers, the schools' characteristic that facilitates use was having conversations with other teachers. While for the management school level planning, motivation of teachers and professional development were seen as facilitating use of the feedback. Both teachers and management felt that the feedback system itself helped to establish these school characteristics through its structure, paradigm and support materials.

Effectiveness of the feedback system

The teacher and management ratings of the various components of the feedback system are illustrated in Table 8.13 and Table 8.14 respectively. Each component of the feedback system was rated in terms of appearance, clarity, need for the content, importance of the content, accessibility, ease of use and effectiveness.

The mode evaluation for every aspect of the feedback system was 4 or above. This shows a high level of satisfaction with each aspect of the feedback system for the evaluated quality criterion. However, it is apparent in both the teacher and manager evaluations that accessing and using the electronic resource and website is challenging. These resources also seem to be generally underutilised based on the data from the rest of the questionnaires. Poor IT infrastructure and low levels of computer-literacy seem to be contributing factors to this phenomenon. Schools however expressed the view that electronic aspects should be maintained as ITC infrastructure was improving and the teachers were working on improving their computer-literacy.

Table 8.13: Teacher rating of Feedback System Components – Histogram, Mean (Me) and Mode (Mo)

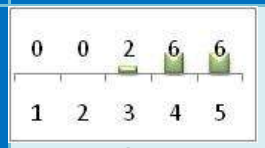
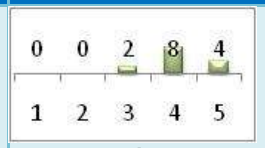
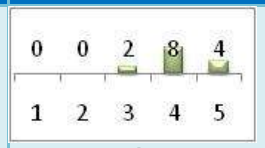
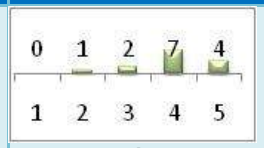
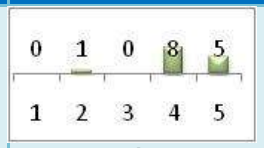
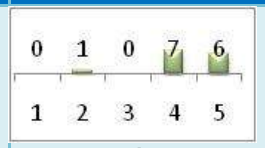
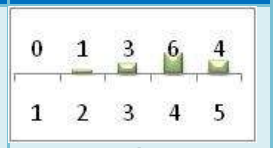
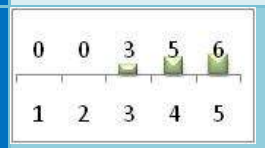
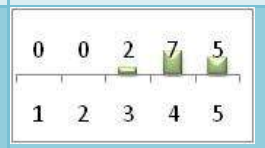
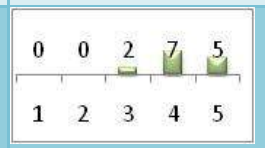
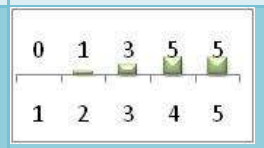
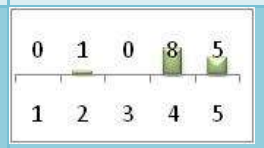
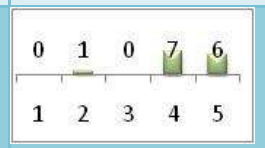
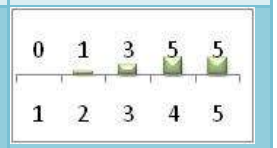
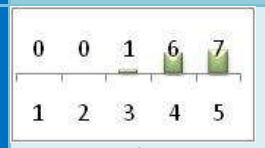
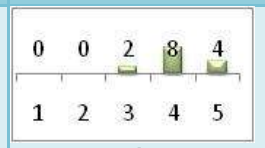
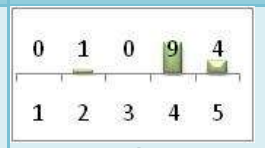
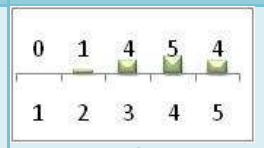
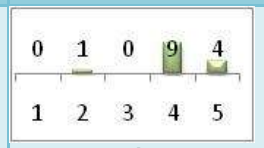
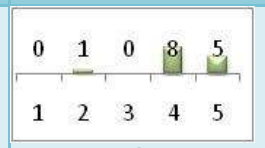
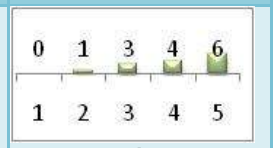
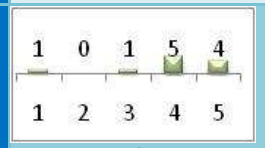
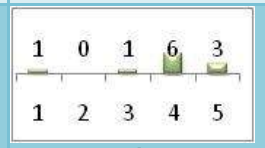
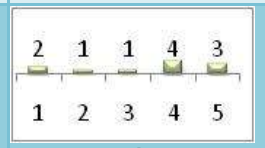
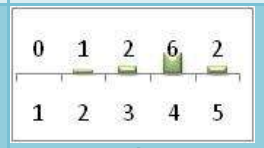
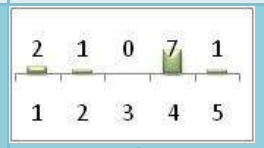
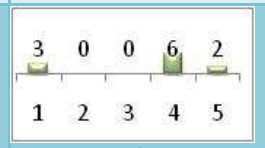
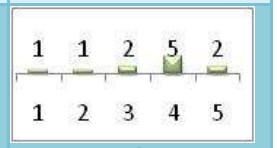
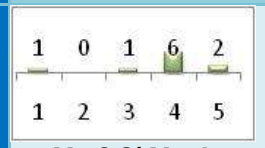
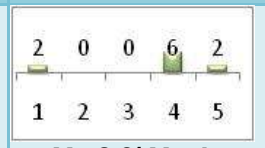
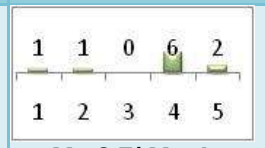
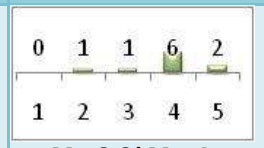
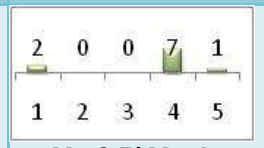
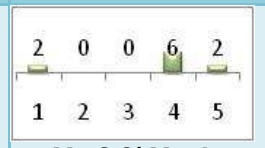
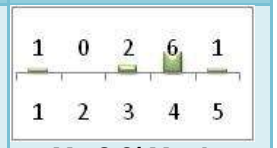
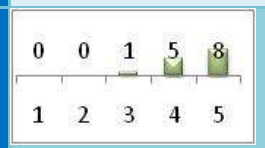
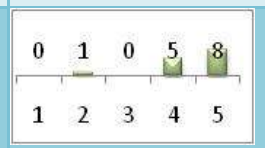
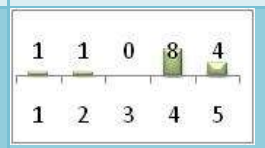
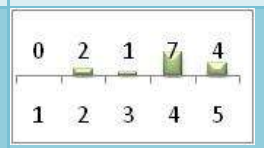
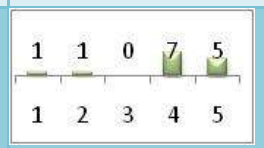
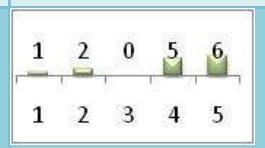
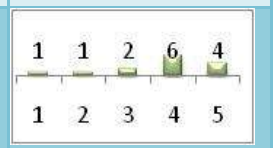
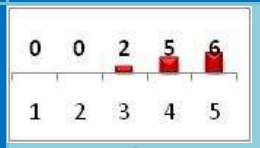
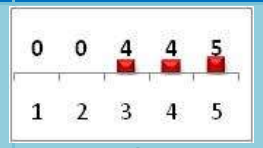
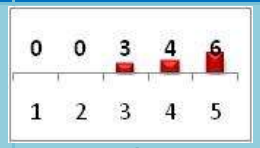
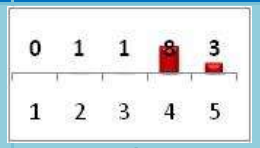
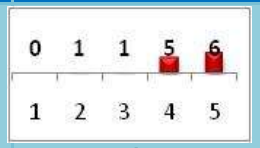
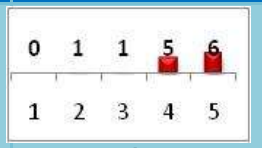
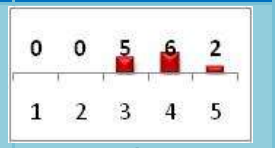
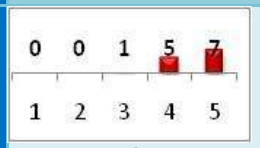
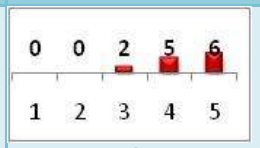
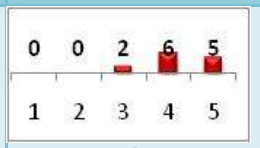
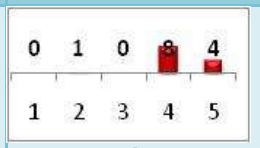
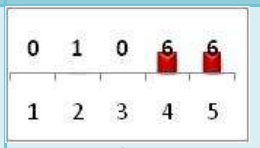
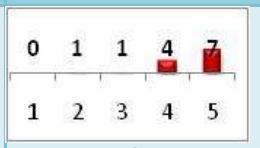
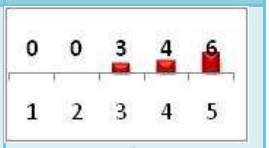
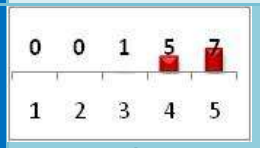
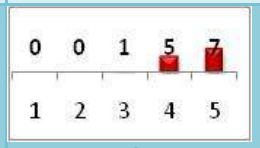
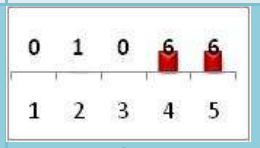
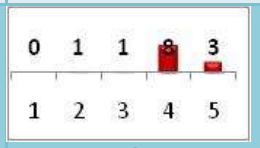
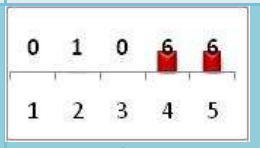
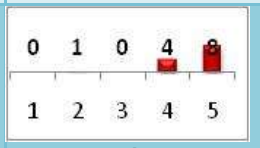
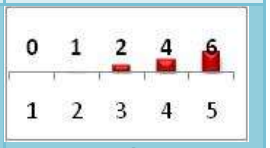
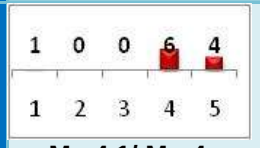
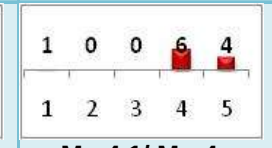
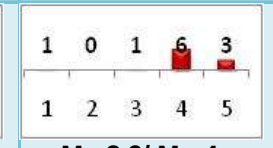
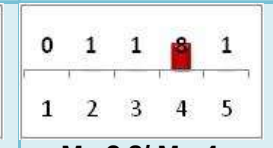
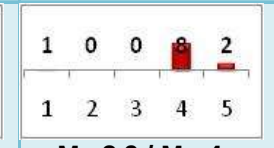
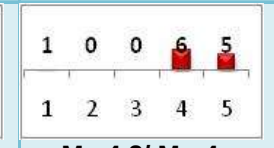
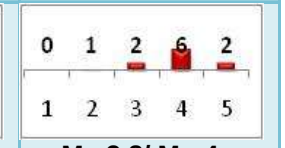
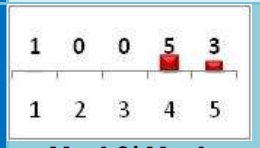
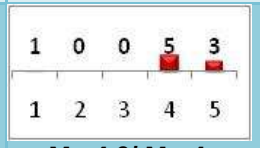
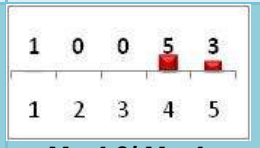
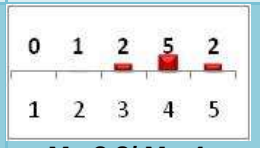
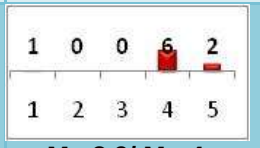
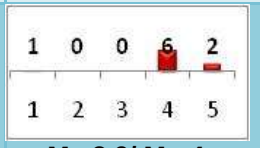
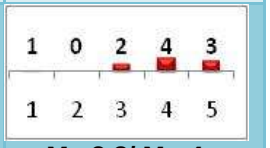
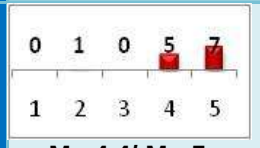
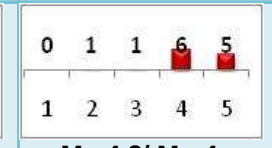
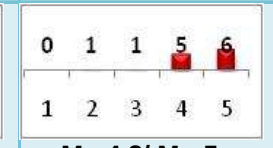
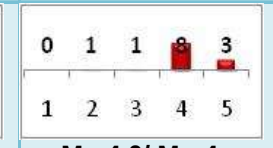
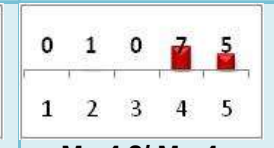
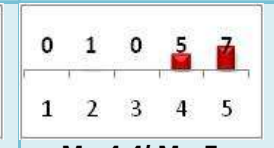
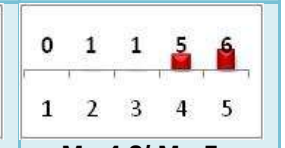
1=poor - 5=Excellent	Appearance	Clarity	Need for content	Importance of content	Accessibility	Ease of use	Effectiveness
Assessment	 0 0 2 6 6 / 1 2 3 4 5 **Me 4.3/ Mo 4.5**	 0 0 2 8 4 / 1 2 3 4 5 **Me 4.1/ Mo 4**	 0 0 2 8 4 / 1 2 3 4 5 **Me 4.1/ Mo 4**	 0 1 2 7 4 / 1 2 3 4 5 **Me 4.0/ Mo 4**	 0 1 0 8 5 / 1 2 3 4 5 **Me 4.2/ Mo 4**	 0 1 0 7 6 / 1 2 3 4 5 **Me 4.3/ Mo 4**	 0 1 3 6 4 / 1 2 3 4 5 **Me 3.9/ Mo 4**
Report	 0 0 3 5 6 / 1 2 3 4 5 **Me 4.2/ Mo 5**	 0 0 2 7 5 / 1 2 3 4 5 **Me 4.2/ Mo 4**	 0 0 2 7 5 / 1 2 3 4 5 **Me 4.2/ Mo 4**	 0 1 3 5 5 / 1 2 3 4 5 **Me 4.0 / Mo 4.5**	 0 1 0 8 5 / 1 2 3 4 5 **Me 4.2/ Mo 4**	 0 1 0 7 6 / 1 2 3 4 5 **Me 4.3/ Mo 4**	 0 1 3 5 5 / 1 2 3 4 5 **Me 4.0/ Mo 4.5**
Manual	 0 0 1 6 7 / 1 2 3 4 5 **Me 4.4/ Mo 5**	 0 0 2 8 4 / 1 2 3 4 5 **Me 4.1/ Mo 4**	 0 1 0 9 4 / 1 2 3 4 5 **Me 4.1/ Mo 4**	 0 1 4 5 4 / 1 2 3 4 5 **Me 3.9/ Mo 4**	 0 1 0 9 4 / 1 2 3 4 5 **Me 4.1/ Mo 4**	 0 1 0 8 5 / 1 2 3 4 5 **Me 4.2/ Mo 4**	 0 1 3 4 6 / 1 2 3 4 5 **Me 4.1/ Mo 5**
Resource CD/DVD	 1 0 1 5 4 / 1 2 3 4 5 **Me 4.0/ Mo 4**	 1 0 1 6 3 / 1 2 3 4 5 **Me 3.9/ Mo 4**	 2 1 1 4 3 / 1 2 3 4 5 **Me 3.5/ Mo 4**	 0 1 2 6 2 / 1 2 3 4 5 **Me 3.8/ Mo 4**	 2 1 0 7 1 / 1 2 3 4 5 **Me 3.4/ Mo 4**	 3 0 0 6 2 / 1 2 3 4 5 **Me 3.4/ Mo 4**	 1 1 2 5 2 / 1 2 3 4 5 **Me 3.6/ Mo 4**
Support Website	 1 0 1 6 2 / 1 2 3 4 5 **Me 3.8/ Mo 4**	 2 0 0 6 2 / 1 2 3 4 5 **Me 3.6/ Mo 4**	 1 1 0 6 2 / 1 2 3 4 5 **Me 3.7/ Mo 4**	 0 1 1 6 2 / 1 2 3 4 5 **Me 3.9/ Mo 4**	 2 0 0 7 1 / 1 2 3 4 5 **Me 3.5/ Mo 4**	 2 0 0 6 2 / 1 2 3 4 5 **Me 3.6/ Mo 4**	 1 0 2 6 1 / 1 2 3 4 5 **Me 3.6/ Mo 4**
Feedback session	 0 0 1 5 8 / 1 2 3 4 5 **Me 4.5 / Mo 5**	 0 1 0 5 8 / 1 2 3 4 5 **Me 4.4/ Mo 5**	 1 1 0 8 4 / 1 2 3 4 5 **Me 3.9/ Mo 4**	 0 2 1 7 4 / 1 2 3 4 5 **Me 3.9/ Mo 4**	 1 1 0 7 5 / 1 2 3 4 5 **Me 4.0/ Mo 4**	 1 2 0 5 6 / 1 2 3 4 5 **Me 3.9/ Mo 5**	 1 1 2 6 4 / 1 2 3 4 5 **Me 3.8/ Mo 4**

Table 8.14: Management rating of Feedback System Components - Histogram, Mean (Me) and Mode (Mo)

1=poor - 5=Excellent	Appearance	Clarity	Need for content	Importance of content	Accessibility	Ease of use	Effectiveness
Assessment	 Me 4.3/ Mo 5	 Me 4.1/ Mo 5	 Me 4.2/ Mo 5	 Me 4.0/ Mo 4	 Me 4.2/ Mo 5	 Me 4.2/ Mo 5	 Me 3.8/ Mo 4
Report	 Me 4.5/ Mo 5	 Me 4.3/ Mo 5	 Me 4.2/ Mo 4	 Me 4.2/ Mo 4	 Me 4.3/ Mo 4.5	 Me 4.3/ Mo 5	 Me 4.2/ Mo 5
Manual	 Me 4.5/ Mo 5	 Me 4.5/ Mo 5	 Me 4.3/ Mo 4.5	 Me 4.0/ Mo 4	 Me 4.3/ Mo 4.5	 Me 4.5/ Mo 5	 Me 4.2/ Mo 5
Resource CD/DVD	 Me 4.1/ Mo 4	 Me 4.1/ Mo 4	 Me 3.9/ Mo 4	 Me 3.8/ Mo 4	 Me 3.9 / Mo 4	 Me 4.2/ Mo 4	 Me 3.8/ Mo 4
Support Website	 Me 4.0/ Mo 4	 Me 4.0/ Mo 4	 Me 4.0/ Mo 4	 Me 3.8/ Mo 4	 Me 3.9/ Mo 4	 Me 3.9/ Mo 4	 Me 3.8/ Mo 4
Feedback session	 Me 4.4/ Mo 5	 Me 4.2/ Mo 4	 Me 4.2/ Mo 5	 Me 4.0/ Mo 4	 Me 4.2/ Mo 4	 Me 4.4/ Mo 5	 Me 4.2/ Mo 5

The quantitative ratings of the feedback system were supplemented with qualitative data from the open-ended question section of the questionnaires (see Table 8.15). A number of benefits of the feedback system for the school were noted. This included the system's diagnostic capabilities in identifying learners at risk or exceptional learners, the use of the feedback to monitor and improve standards, the motivational power of the feedback for schools and the value of the feedback for triangulation and monitoring internal assessment standards. The feedback was generally employed for planning and action in the schools and the managers indicated that the feedback helped with identifying professional development needs.

All schools indicated that they would recommend the feedback system to other schools. Reasons for recommendation included the overall effectiveness, inviting approach, diagnostic value, facilitation of monitoring standards, professional development opportunities, informing of teaching and planning and the quality of the data. Overall, the feedback system was evaluated positively with specific mention of the opportunities for professional development, dynamic and up to date nature of the system, high quality of the feedback and the usefulness in terms of monitoring and improving standards.

Table 8.15: Open-ended questions on teacher and management views about the effectiveness of the feedback system

Questions	Teachers	Management
What benefits has the SAMP feedback system had for you and your school, if any?	• **Identifying learners:** Also helps to identify learners who needs remedial. | It helps the Grade 1 teachers to identify and confirm problems. • **Monitoring and improving standards***: Om hoë onderrig- en onderwysstandaarde daar te stel.*.[66]| Improvement is showing/evident with our grade 1 learners. |…to know the trends or how all children in English schools are performing. • **Motivation:** *Skep die uitdaging om nou beter te presteer in vergelyking met ander deelnemende skole.*[67] • **Triangulation of own assessment:** Outside assessment of our learners' performance. • **Informing planning:** Planning to improve on areas where we are weak …. | Improve the planning of the curriculum.	• **Identifying learners:** ... to know where to focus our teaching on more. |… the grade one teachers, help them identify problem and or confirm their decisions • **Monitoring and improving standards***:* We are able to gauge our performances at a glance. | Helps us realise where our weaknesses are. • **Motivation:** It encourages us to work hard where we are lower and to keep up the standard where we are up. Different activities that stimulates educators and learners. | Has encouraged educators to work much harder at improving learners results. • **Triangulation of own assessment:** Bench marking, planning. • **Informing planning:** We know where or in which area we need to improve on. | We emphasize numeracy and literacy at grade R level to ensure reading ability and counting/numeracy skills at an early age. | Good idea of where we are going for the year. What we need to focus on. • **Professional development:** … educators are able to see their strength and weaknesses.
Would you recommend the SAMP feedback system to another school? Why?	**Yes, would recommend:** • **Diagnostic:** Helps in identification of learning problems. • **Monitoring standards:** It's a great way to see if your children are on standard. | … it is good to see comparisons in order to know if your school is on track. • **Professional development:** … a learning experience assessment. | Ja, verseker. Dra by tot verrykende denke! Nuutste onderrigmetodes en standaard van jou skool.[68] • **Informs teaching and planning**: It helps a lot in our daily teaching • **Data quality:** Provides vital information. .| Provides valid information. • **Invitational approach:.** It is non Judgemental… and free | It is constructive and educational in terms of educators' self|… it is well done, user-friendly and legible. • **Effective:** So that the school also can benefit and see the effectiveness of the programme.	**Yes, would recommend:** • **Diagnostic**: It helps to identify learners needs/ learning barriers • **Monitoring standards:** To see if their standard is on par with the other schools (national, local) | It is always important to get feedback and tests from an independent sector to inform the school about its status with regard to literacy and numeracy in comparison to the international standards • **Professional development**:. In terms of promoting early teaching of the relevant skills like at your ECD facility. • **Informs teaching and planning:** …informative. • **Data quality:** Comprehensive.| …. receiving valid information. • **Effective:** … so that they also benefit • **Professionalism:** Very professionally done. Person X's mannerisms and professional attitude makes it a pleasure and not a disruption.

[66] English translation: *To set high pedagogical standards.*
[67] English translation: *Creates the challenge to achieve better in comparison to other participating schools.*
[68] English translation: *Yes, definitely. Contributes to enriching and creative thoughts! Newest teaching methods and standards of your school.*

(Table 8.15 – Continued)

Questions	Teachers	Management
What is your overall impression of the SAMP feedback system?	• **Generally positive evaluation:** Excellent. It is really helpful to us.| Very good. | Love to attend it each year. | It is effective. • **Professional development:** Excellent and is of beneficiary (sic) for educators to improve their teaching. • **Dynamic and up to date**: Resourceful and quite up to date. • **High quality feedback:** Good and relevant. | Excellent and informative. • **Monitoring and improving standards:** Baie goeie riglyn om standaard van you skool se Graad Een leerders te bepaal en te vergelyk en te verbeter t.o.v. vorige jare.[69] | Helpful and it helps for self and school improvement or enrichment.	• **Generally positive evaluation:** Excellent. | Good work, keep it up. | Good | Very good • **Dynamic and up to date:** Informative, resourceful and on-going. • **High quality feedback:** Comprehensive, factual and detailed. Very relevant. | Informative and useful| A useful tool and very informative. Trends can be identified over a long period of time. | Good relevant and clear explanation • **Monitoring and improving standards: I**t provides us with detail on where to focus .

Several design guidelines were developed based on the evaluator reports and questionnaire data on Prototype IV. The design guidelines are discussed separately below.

8.2.2.7 Design Guidelines from the Evaluator Reports

1. ***Criterion referencing should supplement norm referencing*** to prevent educators from over-interpreting learner results.
2. ***Extension items should be added*** to the subtests where a ***ceiling effect*** is observed.
3. ***The difficulty level of reporting language*** should be evaluated and adjusted to make reports and manuals inviting and accessible.
4. ***User-friendliness of electronic resources*** should be facilitated as far as possible including an 'autorun' functionality, especially where users have low levels of computer-literacy.

8.2.2.8 Design Guidelines from the Final Evaluation Questionnaire

1. ***Data must be presented on several levels with diagnostic detail*** as reports are used on both individual learner, classroom and school level for planning. Data should for instance be presented graphically, textually,

[69] English translation: *Very good guidelines to determine the standard of your school's Grade One learners and compare and improve in comparison to previous years' results.*

tabulated and electronically to cater for different user preferences. The presentation of data at different levels of detail helps to provide data that can be applied to address different issues in the school environment, according to the school's needs.

2. ***Data must be presented in a non-judgemental, non-threatening way*** to encourage action as opposed to defensiveness.
    - ***Emphasis should be placed on both strengths and weaknesses*** of the feedback data. This ensures a balance between motivation and identifying areas for improvement.
    - This is particularly important at feedback sessions where ***a non-judgemental, collegial atmosphere must be engendered at feedback sessions***, to ***facilitate interaction and receptiveness.***
3. ***Fieldworker interaction with schools*** plays a large role in establishing the ***credibility*** of the assessments, data and feedback system as a whole.
    - ***Fieldworker training should be thorough and supervision on-going*** to ensure that fieldworkers interact professionally with schools and build good rapport with learners.
4. ***The quality of logistical arrangements and professionalism*** of the team contributes to ***trustworthiness*** of the feedback system***.***
    - ***Logistical arrangements must cause the minimum of disruption*** of classes and learning time.
5. Although difficulties with IT infrastructure and low levels of computer-literacy may hamper access to ***electronic resources***, the development and dissemination of such resources should not be ceased. Schools expressed a need for these resources, indicating that these resources were very useful and they would "*catch-up"* with their development of ITC resources and computer-literacy skills. The availability of such resources was seen as ***encouraging improvement of IT infrastructure and improvement of computer-literacy.***

- ***The use of electronic resources*** helped educators to stay current with developments in education and new resources. This supports ***professional development***.
- ***Resources incorporated must be both appropriate and inviting to learners*** to encourage and motivate them to use materials.
- ***Electronic educational games allow opportunities for cross-curricular work*** as for instance, literacy, numeracy and phonics games can be used in computer-literacy classes
- ***Websites*** provide the greatest opportunity for resources ***to remain current.***
- ***Website access*** allows for ***transfer of resources for home use.***

8.3 Conclusion

This chapter documents the Assessment Phase of the design research process. One complete cycle of design research took place during this phase, which examined the functioning of the elements of the feedback system, as well as the global functioning of the integrated system. The evaluation was achieved through expert evaluation reports as well as comprehensive questionnaires for teachers and management staff at schools. The overall evaluation of the feedback system was positive, with further design guidelines identified. In the next chapter, the data from the design research process are discussed along with the main design guidelines and recommendations for further research and design.