

Teacher Researcher Programme 2003/2004

**The Implementation of a Formative
Assessment Strategy for Children in
the Early Years**

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Acknowledgements

Firstly, thanks to Dean Robson, GTC Research Fellow, who painstakingly (with an emphasis on pain!) helped rearrange this report into a structure that was logical without wasting any of my hard work! The support and guidance was very much appreciated. Thanks is also given to the GTC for allowing me the opportunity to carry out this study.

Gratitude is also shown to those teachers who gave up their time to speak about their experiences. This also extends to teachers who were not formally interviewed but passed on their expertise in other ways, in particular the staff of Hawthornden.

A mention must also be given to the teacher-researchers who embarked on their projects at the same time I did and have successfully come out the other end. You all have my respect! I hope our paths cross again some time in the future.

Lastly, I would like to thank family and friends who have shown support and encouragement and not a small amount of patience! You are all appreciated.

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The purpose of this study was to measure the effects of a formative assessment strategy on Early Years children. The strategy was developed and implemented relatively easily into classroom life. A “die” system was used because of its simplicity and the children found this to be very user-friendly. Sharing targets was found to have many benefits and even infant children can devise criteria for success for these targets. Results show that improvements were made in mathematics and language progress and also in the class self-esteem levels. Having a control group allowed comparisons to be made and it was concluded that the control group enjoyed further progress and significantly higher differences in self-esteem scores. Conclusions reached were sensitive to the fact that the sample involved Primary One children whose self-esteem levels may have been fragile in the early stages of the research while the children settled into school. It has been recommended that this type of strategy is extended to a different year group to clarify this issue.

Chapter 1: Introduction

1.1 Background

The issue of assessment is one which has much written about it and is constantly revised. Assessment is often thought of as a burden on an already heavy teacher workload. However, current thinking suggests that the key to better and more useful assessment lies in the shape of “formative assessment.”

This research aims to introduce and explore a practical and adaptable formative assessment strategy which is easily transferable across the curriculum. A definition of formative assessment comes from Black [1]:

“Formative assessment is concerned with the short term collection and use of evidence for the guidance of learning mainly in day-to-day classroom practice.”

In their recent work for King’s College, Black and Wiliam [2] reiterate the importance of this strategy:

“Assessment which is explicitly designed to promote learning is the single-most powerful tool we have for both raising standards and empowering life-long learners.”

The current trend towards formative assessment has not always been inevitable. Although formative assessment is certainly not in a new concept, it is only in recent times it has been promoted and widely accepted. Attempts have been made in the past to promote this type of assessment and progress was made in the 1980s when new tools were developed to aid these approaches. Though these were welcomed by teachers, the government was not so enthusiastic. During the 1990s teacher assessments were considered to be the most useful, alongside external results. However, it was thought that teacher assessments were not genuine as they were completed after external results had been published which allowed teachers assessments to reflect these. This left a gap for a new surge in interest in formative assessment.

Black and Wiliam [2], however, have no doubt that it works. They claim that formative assessment reduces the spread of attainment in the classroom while also raising the attainment overall. This results in large improvements for low-attainers.

1.2 Author's Perspective, Aims and Objectives

This improvement for low-attainers encouraged the author's decision to put formative assessment into place in the classroom. The class used as a research subject is a Primary One class with around 20% having some aspect of special needs. These children are not necessarily low-attainers though some self-esteem issues were apparent. It was hoped that the use of a strategy which focuses on effort rather than ability certainly would prove to be beneficial for all children, including the children with special needs.

Carrying out this sort of research with Early Years children meant there were maturity issues to consider. One of these was identified by Piaget, (quoted in Fontana [3]) who describes the problem of egocentrism for children in this age range:

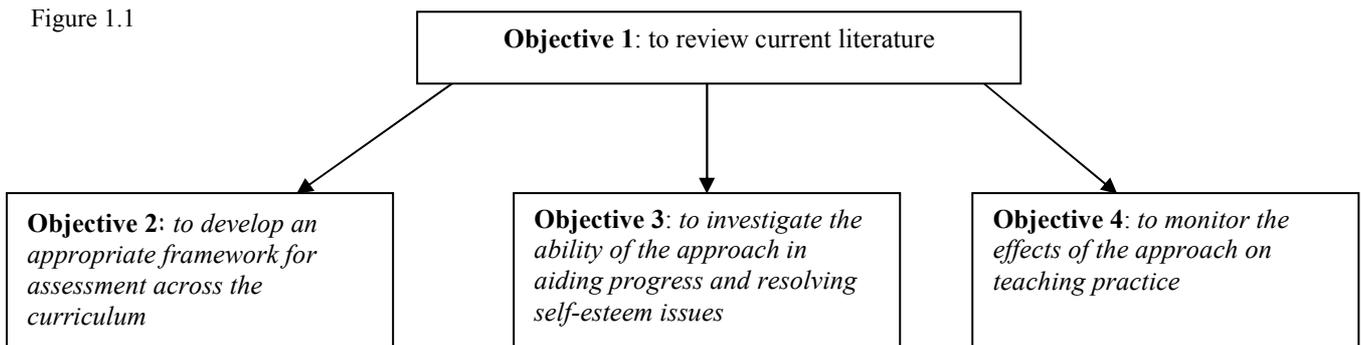
"Children at this time are unable to be critical, logical or realistic in their thinking."

With this in mind, it was clear that a formative assessment strategy for Primary One children relied upon a simple and user-friendly strategy. After becoming acquainted with the issues surrounding formative assessment, a research question was devised to encompass the study:

"How does the implementation of a formative assessment strategy affect children in the Early Years?"

The approach decided upon was based on "can-do" statements as they can be simplified for the children if required. After devising such a broad question it became apparent that more focussed research questions had to be addressed. These are provided below in Figure 1.1 in the form of research objectives. As shown in Figure 1.1 these objectives formed a two-staged research approach as the review of literature (described in the next Chapter) heavily influenced the methods used when addressing Objectives 2-4. The methods used to address each objective are given in Chapter 3.

Figure 1.1



Chapter 2: Literature Review

To inform research objectives 2-4 a literature review was undertaken as objective 1. A comprehensive summary of the literature, giving a background to the important topics relating to this study, is provided below. As part of the review, interviews were also conducted.

2.1 Developing an assessment strategy

A brief description of formative assessment has been provided in the Introduction. Whilst the literature strongly supports formative assessment, it recognises that summative assessment also has its place in education. The nature of this study, however, was to produce an assessment strategy that was able to be implemented across the curriculum and it seemed that formative assessment would best fulfil that function. From the beginning the author had a clear idea of the type of strategy to be implemented. To inform the development of an assessment strategy which was new and unfamiliar to the children, advice was sought from the literature. It appeared that in order for an assessment strategy to be sound, there were a number of factors which must be adhered to. Nutall (quoted in Conner [4a]) suggests that the strategy should:

- be fair and perceived as fair by all concerned
- be capable of fulfilling formative and summative purposes
- be intelligible to all who have an interest
- be economical in its use of resources
- be “methodologically” sound (valid and reliable)

These principles were used as guidelines throughout the study and were extremely manageable. The most difficult to contend with was to “be fair and perceived as fair by all concerned” as the children and the author frequently had different opinions as to how work should be judged. In order for the assessment strategy to remain fair personal opinion should not be allowed to override the children’s. The literature suggests that in such cases of disagreement emphasis should be placed not on the grading received but on listening to each other’s justifications of the coding.

It was anticipated that it would take time for Primary One children to become familiar with a new strategy, so it was comforting to read (Gardner in Murphy [5]) that explicit instructions were recommended until the children were familiar with the new system and that after a while “*much assessment would occur naturally on the part of the student*

and teacher.” The author was hopeful that the process would occur naturally and that the benefits for all would be noticeable.

2.2 Justification of methods used

An integral part of the strategy was sharing “targets” or “Learning Intentions” (these terms are interchangeable) as they are described by Clarke. There are three different types of Learning Intention (Clarke [6a]): skills (to be able to); concepts (to understand); knowledge (to know). The style preferred by the author was skills based targets e.g. “I am able to...” and these could be distributed to the children in simple language in the form of “can-do” statements (Gipps and Stobart [7a]) e.g. “I can...” These type of statements are ideal for Early Years children as they can be simplified and broken down into very small steps. The likely benefits of sharing targets are listed by Clarke [8a]:

- Children are more focused
- Children ask for it if it has been forgotten
- Even infant children can create criteria for success
- They are more likely to discuss their learning needs
- Quality of work improves
- Behaviour improves
- Children persevere for longer
- Children have ownership so responsibility falls to them
- More enthusiasm about learning
- Children automatically self-evaluating
- Reflection becomes necessary
- Teacher becomes more focussed on learning intention than activity
- Teacher expectations rise
- Focus becomes on quality

These benefits reaffirmed that this was the type of strategy that could be used effectively with infant children. The essence of this work was to be criterion-referenced assessments, which Gipps and Sobart [7b] describe as:

“...designed to reflect on whether or not a student can do a specific task, or range of tasks, rather than to measure how better or worse his performance is in relation to that of other students. Thus levels or criteria of performance are set and the students are marked or graded according to whether they reach the level or attain the criterion.”

This formed the basis of the strategy developed, since the author felt it was important for the children to be comparing themselves against a standard and not against each other. However, Gipps and Sobart also warned that as recently as 1992 infant teachers were not ready to welcome criterion-referenced assessments into their classrooms.

The children judging their work against these pre-specified targets and coding it to reflect their capabilities was also a major part of the strategy employed. Discussing these capabilities in self-evaluation sessions proved difficult for the children. They also found discussing their strategies and identifying how problems had been overcome very difficult. The author took a lead role in these sessions initially. Due to this and the discussions about coding as described above, the author investigated literature on the feedback of information to children. One comprehensive list by Conner [4b] pinpointed that:

- Feedback should be related to the task itself (and for Clarke related to the Learning Intention only)
- As much or as little help as possible should be given rather than providing complete solutions
- Concentration should focus on specific errors and weak strategies
- Pupils should be offered suggestions about how they might improve rather than being offered one way of doing something
- Feedback should be designed so that it stimulates a thoughtful response, building upon previous learning
- Details of correct answers should be given
- Comments should focus on progress rather than absolute levels of performance
- Focus should be on deep rather than superficial learning
- Feedback should help the pupil realise that success is due to “internal, unstable, specific factors (e.g. effort) rather than stable, general factors (e.g. ability)”

The last point on this list is a useful reminder that formative assessment is considered to be beneficial for low-attainers or children with low self-esteem since emphasis is placed not on ability but on effort and commitment to the task. Progress was measured on profiles compiled from National Guidelines. A score was calculated for each child from the 48 competences in mathematics and language. Further explanation is provided in the following Chapter.

2.3 Self-esteem and motivation

Self-esteem levels in children are constantly fluctuating and any changes in classroom life can have positive and negative effects. The most practical advice in this area came from Morris [9] who provides a set of indicators (contained in Appendix 1) for self-esteem to be measured against. These questionnaires were completed at the start of the research project and again six months later. The self-esteem indicators provided four pieces of information, the most useful being an overall self-esteem score, which can then be split into three, very revealing, component parts:

- I. *Sense of self* – the extent to which the pupils know themselves and are comfortable with who they are and what they like.
- II. *Sense of belonging* – the extent to which the pupils feel they are part of a social group and have a sense of pride and security because of it.
- III. *Sense of personal power* – the extent to which pupils have a sense of their own forcefulness and the impact they can have on other people and the world around them. They sense that their thoughts, feelings and opinions matter.

As can be seen from the example in Appendix 1 the questions are completed on a grading scale (0-3) and added to provide the numerical values on which the results are based. Further explanation is given in the following Chapter.

In addition to considering how self-esteem would be affected, it appeared important to measure changes in motivation levels. Figure 2.1, below, shows clearly the number of variables which can influence a child's motivation for learning. In the diagram below, formative assessment (FA) has been added to show the areas it impacts on. If formative assessment enhances these seven areas then it seems likely that overall motivation for learning should be enhanced too.

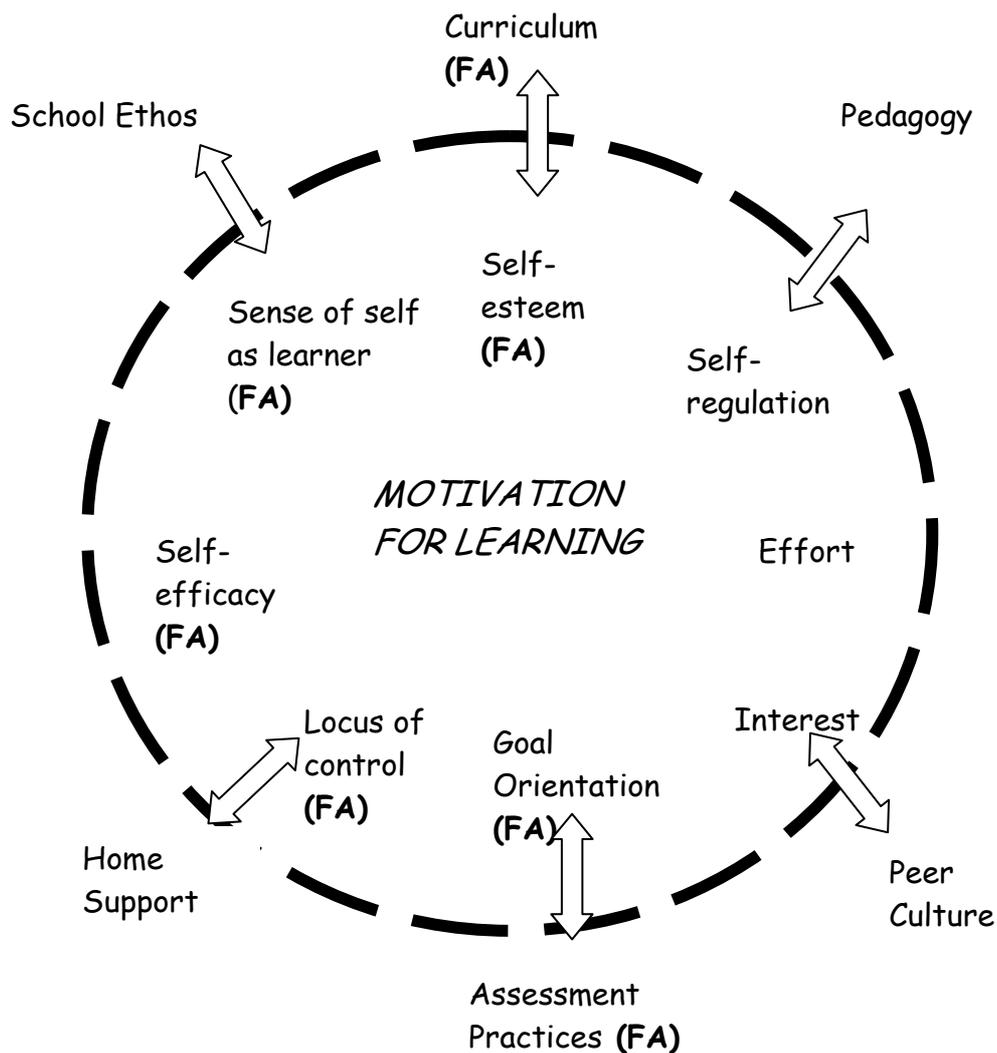


Fig 2.1 Factors affecting Motivation from (Harlen and Crick [10])

2.4 Teaching and classroom life

Although formative assessment seemed easy to implement, the literature suggested that attitudes would need to change to make formative assessment wholly successful. As formative assessment involved sharing targets and the children making their own judgements, it meant that a lot of ownership and responsibility would pass to them. Clarke [6b] offers the opinion that formative assessment works best in a constructivist classroom and details how this may be achieved. The qualities of a constructivist teacher are listed below. The measures taken by the author to address these are noted.

- encourages and accepts autonomy and initiative – actively encouraged through developing success criteria and during self-evaluation sessions

- links concepts to real-life situations – all targets were linked to the “big picture” and an explanation provided as to why these things were important to learn
- encourages higher-order thinking – actively encouraged during self-evaluation time
- changes lesson content to facilitate pupil learning – I did not need to do this though was aware this was a recommended strategy
- uses brain-storming to ensure they cater for children’s interest and understanding
- allows for discussion time – self-evaluation time and also chances given to discuss new ideas with peers
- encouraged elaboration of initial responses by using a multiple-choice approach – monitored using observation schedules
- encourages wait time with no hands up – I called this “think time” and it became an integral part of my practise

These qualities provide an insight into how teaching and classroom life are likely to change when using formative assessment. Although much practise remains the same, it is clear that changes in attitude and emphasis are needed. For example, the teacher becomes focussed on sharing information with the children rather than hiding it. This can cause initial uncertainty, but the list of potential benefits, as set out in the Introduction, would help to dispel any doubts.

Chapter 3: Methods

This Chapter explains the methods used to explore Objectives 2-4. Results are provided and discussed in the following Chapter.

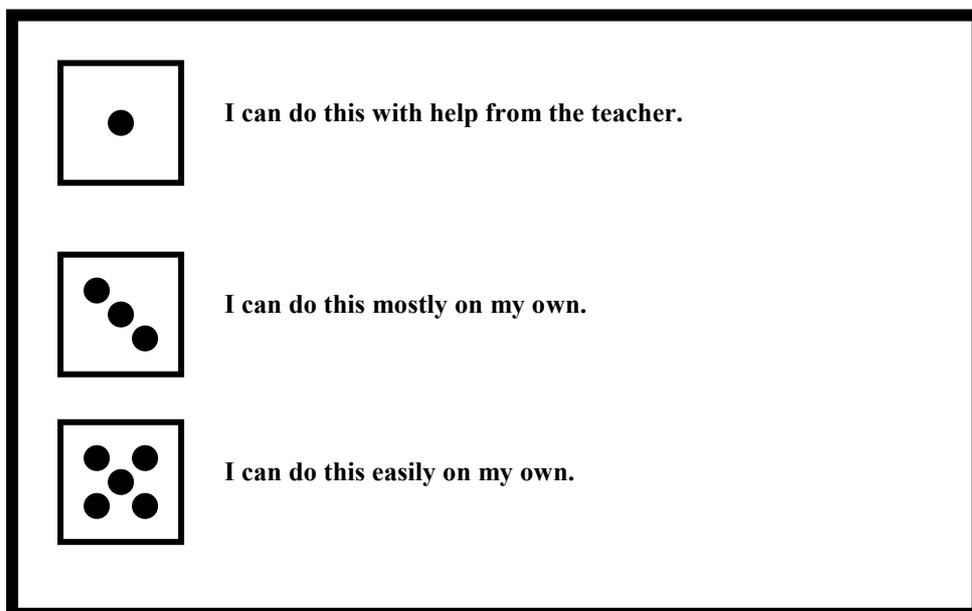
3.1 Objective 2

Objective: to develop an appropriate framework for assessment across the curriculum

Using the advice outlined in the previous Chapter, the following assessment strategy was devised.

Once the lesson had been introduced in the usual way, the children were given the task instructions first. Once the task instructions were explained and the children knew what they would be “doing” the emphasis then shifted to what the children would be “learning”. A target or Learning Intention was devised by the author and displayed clearly. It was explained in simplified terms and read aloud by the children. Success criteria for the target were then devised in collaboration with the children so they knew what they had to do to become successful. After this was understood the author explained why what was being learned was important. This is called the Aside. The children completed their work thinking of the Learning Intention and Success Criteria to help them and then coded their work to reflect how successful they had been at meeting the target. The children used the following “die” system (Figure 3.1) by drawing the appropriate number of dots onto their work, or by using a flashcard showing the appropriate number of dots:

Figure 3.1: The Coding System



For the first 4-6 weeks of the project the author coded the children’s work for them in order for them to see what was expected. When the children were judging for themselves they were asked to justify the reasons for their choice,

especially if it was felt they had judged themselves too harshly or too generously. In these circumstances, instead of striving to reach an agreement on how many dots should be given, each side's justification was focussed on.

Towards the end of each lesson, the class came together for self-evaluation time and using questions suggested by Clarke [8b] (see Appendix 2). In the beginning the author led these sessions but in latter stages the level of support provided was reduced. The final stage of the lesson involved the children posting a coloured card into the postbox to indicate their level of enjoyment of the lesson. A flowchart showing all stages of the lessons is contained in Appendix 3. This was used as a lesson planner to ensure no stages of the process were omitted. Though it may appear time-consuming the only parts needing completion are the Learning Intention and the Aside as the Success Criteria are devised in consultation with the children. A completed lesson planner is included in Appendix 3 to illustrate this.

3.2 Objective 3

Objective: to investigate the ability of the approach in aiding progress and resolving self-esteem issues

3.2.1 Measuring progress

- Language and Mathematics profiles were used to measure attainment at the start and end of the research period. These are compiled from National Guidelines and consist of 48 competences in each area. These form “building blocks” where each new piece of knowledge builds on existing knowledge and ensures progression. The lowest row of competencies are expected to be gained first and the top row contain the most difficult competencies for children in this age range. Each competency is numbered and numerical values gathered for this study come from the highest numbered competency each child was confident with at the start and end of the time period.
- Learning books were devised from the 5-14 guidelines to record progress being made.
- Check-ups (tests) were carried out throughout the research. These were varied in nature and given at times with and without a target.
- A control group was set up which was given targets during Environmental Studies lessons while the rest of the class were not. The group was made up of 7 children: 2 above average achievers, 3 average achievers and 2 below average achievers. These 7 children also varied in self-esteem levels (in comparison with the rest of the class): 2 had high self-esteem, 3 had average self-esteem and 2 had low self-esteem. It should be noted that within the control group there was no correlation between self-esteem and ability levels.

3.2.2 Measuring self-esteem

- Self-esteem questionnaires devised by Morris [9] were used by the author at the start and end of the research period. An overall score was calculated in addition to a score for the three components – sense of self, sense of belonging, sense of personal power, as described in the previous Chapter. Appendix 1 contains an example of the questions used and shows the grading scale from 0-3. Once all questions have been answered the numbers are added to provide a total self-esteem score. An overlay for the three component parts is used to calculate these.
- Enjoyment of learning was measured through a postbox system where a coloured card expressed the level of enjoyment. This operated on a traffic light system where green indicated a high level of enjoyment down through amber, which indicated no preference either way, and red, which indicated little enjoyment.
- Questionnaires were also used to find out the children’s perceptions of the coding system. These questionnaires were designed by the author although the children were interviewed in groups of three by another teacher. The interview questions are provided in Appendix 4.
- Observation schedules were designed and used in self-evaluation time to record the responses generated. An example is provided in Appendix 5.
- Observation schedules were also in place to record the author’s interactions during self-evaluation time. An example is provided in Appendix 6.

3.3 Objective 4

Objective: to monitor the effects of the approach on teaching practice

Observation schedules were used to record the effectiveness of my interactions during the self-evaluation time. These were recorded by another adult in the classroom. The author also took advice from Clarke [6b] that formative assessment works best in a constructivist classroom, as described in the previous Chapter.

Chapter 4: Results and Discussion

This Chapter is split into four parts. This Chapter presents the research results and discusses these under the following headings: Practical Considerations; Observations of progress; Observations of self-esteem, Teaching Practice.

4.1 Practical Considerations

4.1.1 An overall view

Generally, the system is easy to use and can be easily implemented. Devising targets which were educationally appropriate was initially time-consuming as the author had devised Learning Books using Level A 5-14 guidelines. This involved making “can-do” targets from the documents and then compiling them into subjects and copying one for each child. This became far too onerous to use as it soon became clear that not everything can be recorded. Once it was accepted that this was not going to work, day-to-day targets were used and the codings were recorded on the children’s work or by the flashcard system. The use of the Learning Books was adapted and one book was used to record the majority coding for the class, knowing that if the coding was one or three dots the target would have to be revisited.

The simplicity of the dot system is its greatest quality. The children found the dot arrangements easy to copy and instantly recognisable. A blank square on worksheets and in jotters was a useful reminder that they had to fill it with the appropriate number of dots. In the initial stages, possibly due to maturity issues, it was necessary for the author to code the work as the children were more likely to give themselves the top grading, whether they deserved it or not. During this period it made the children aware that one dot did not mean failure, but that learning was occurring. This needed constant reinforcement as comments heard in the classroom reflected that many of the children still perceived getting one dot as the “worst”.

Asking the children to post coloured cards to express their enjoyment of lessons was beneficial from the point of view that the cards were posted anonymously, meaning any anxiety was removed. Conversely, however, the children could not be asked to do this too often as they began to choose cards at random without thinking about their feelings towards the work.

One main benefit of this system is the children’s involvement and their taking ownership of the target. This came through devising criteria which would make them successful at the target. The literature had suggested that early years

children would be able to do this but the author was initially sceptical. However, there were numerous occasions where the children devised success criteria which were relevant and easily understood by the class.

4.1.2 The teacher's point of view

The benefit for the teacher comes from a shift of emphasis from what the children are doing to what the children are learning. It involves a change in attitude and sharing of information, which results in children having more ownership of their learning and becoming more involved in the decision-making process about next steps.

Short-term planning can change if the majority coding is recorded as it becomes clear which targets still need to be addressed. This stops the teacher from moving on when it is thought that children are ready to moving on when they are ready.

When work was finished and coded it was given to the author to see what coding had been awarded and discussions took place with the child. The children responded well to this and the author found that each child was judged on the merit of their work against the target and not on comparisons with their peers. This system meant all work was compared with the target and success criteria, resulting in a classroom ethos which was happy and relaxed, as any problems the children had were with the work and not with them or their ability.

4.1.3 The children's point of view

The interviews carried out with the children revealed many of their thoughts and feelings about the dot system. A list of interview questions is provided in Appendix 4.

When asked why they thought they were given a target to work towards (Q1), the majority of the responses were “so we know what to do” or “to help us with our work” indicating that they had a good grasp of the reasons behind the strategy.

Of the 12 responses to Q2 – “does having a target help you to learn?” – all 12 said it made learning more fun. One added that “work was harder when we didn't have targets”. A reference was also made to indicate that keeping the target “in your head” makes the work easier to complete.

All 18 responses to Q3 revealed that the target always made sense but they also all knew what to do if it didn't (put their hand up and ask).

Following are a sample of replies to Q4 which asked the children to give their feelings on using the dots:

- *“I like using them. They are easy to use.”* (3 more responses were similar)
- *“It’s not that easy. When you do 5 dots you have to count them”*
- *“The dots feel fine. It doesn’t matter what you get.”*
- *“They are a good idea because they are easy to use.”*

The following comments come from replies to Q6 which asked the children if they had any advice to give to children in another class who were about to start using a dot system:

- *“If you get 5 it’s well done. 3 some help. 1 a lot of help.”*
- *“They need to do their work properly.”*
- *“You need to try to learn.”*
- *“It’s a good thing.”*
- *“Dots are easier than writing.”*

The results from these questions are interesting as it is obvious that the children understand the importance of targets and that understanding what the target means is necessary to be able to complete their work successfully. It also reveals that the majority think targets make the work easier. The interesting admissions come through the comments listed above. When asked their feelings they are very succinct. It is pleasing that one commented that it doesn’t matter what number of dots you get, although when asked to give advice, what is provided is more a description of the system rather than advice about using it, though these responses may relate to the maturity of the interviewees.

4.2 Observations of Progress

When using mathematics and language profiles, as described in the previous Chapter, to measure progress, the basis for evaluating progress is by comparison of the highest competence achieved on the profile at the start and end of the research period.

The progress observations are shown in Figure 4.1, where the highlighted children are the control group. In Language, the average improvement for the class is 21 points which is the same for the control and non-control groups. However

for the Mathematics results, the class average improvement is 24 points, the non-control group is 23 and the control group is 28. This is shown in Figure 4.1, where the highlighted children are the control group.

Figure 4.1 Language and Mathematics Progression

Name	Maths Difference (Aug – March)
Child G	34
Child 8	29
Child 7	28
Child 5	27
Child A	27
Child E	27
Child C	27
Child 2	25
Child D	25
Child 11	25
Child 10	25
Child B	25
Child 9	25
Child 6	25
Child 4	24
Child 1	23
Child 3	19
Child 12	10
Child F	*

Name	Language Difference (Aug – March)
Child 3	27
Child 12	25
Child 5	24
Child 2	24
Child D	24
Child 11	24
Child 8	23
Child A	23
Child 10	23
Child B	22
Child 9	22
Child G	21
Child E	21
Child 6	19
Child 4	19
Child 7	17
Child 1	17
Child C	13
Child F	*

(* indicates no values available at start period so comparisons cannot be drawn)

The spread of attainment across the group was also considered as it was claimed that this can be reduced through formative assessment.

In Language, at the start of the research period, the difference between the highest competence of the highest achiever and the highest competence of the lowest achiever was 18. At the end of the time period this had reduced to 6. In Maths the initial spread was 18 and this later reduced to 15.

These two results support Black and Wiliam’s [2] claim that formative assessment can reduce the spread of attainment while raising it overall. This was not necessarily an expected result, because, as the difficulty of the work in Primary

One increases, it could be expected that a gap would open up and perhaps keep widening. This, however, has not been the case.

The limitations of these results lie in the evidence being gathered by using nursery profiles. In the planning stages the author had intended to use baseline assessment results which are carried out in the initial stages of P1. These are computer based and the programmes are removed from school computers until re-evaluation in June, resulting in unavailability. Alternative means were sought and the Language and Mathematics profiles were the best compromise although they were completed before the research period began, with the result that the information may not be completely accurate or up-to-date.

Using targeted and non-targeted check-ups in different areas of the curriculum showed that giving a target with the check-up leads to an average 2 point increase in test results. It also showed that of the children who improved 71% improved by more than one point. Of the children whose scores fell 67% fell by one point only. This tentatively indicates that any gain is likely to be greater than any loss as the majority of reduced scores were only reduced by one point.

Though enhancements to progress have been made, it is obvious that there are many factors at work and formative assessment, though a major part of classroom life, can only take part of the credit.

4.3 Observations of self-esteem

The self-esteem indicators, as outlined previously, provided vital information.

Overall, the majority of the class had a rise in self-esteem scores but differences only become very clear when we consider the control group, who were chosen because they had varying levels of self esteem. In Figure 4.2 we can see the positions of the control group in relation to the class at the start and end of the research period, based on overall self-esteem scores.

Figure 4.2: Self-esteem Scores

Name	Overall Self-esteem Scores – Sep 2003	Name	Overall Self-esteem Scores – March 2004
Child A	88	Child A	98 (+10)
Child B	88	Child C	94 (+29)
Child 1	82	Child D	93 (+33)
Child 2	77	Child B	90 (+2)
Child 3	75	Child 3	88 (+13)
Child 4	74	Child 1	85 (+3)
Child 5	68	Child 4	79 (+5)
Child C	65	Child 9	72 (+17)
Child 6	63	Child 2	69 (-8)
Child D	60	Child G	66 (+32)
Child E	57	Child E	66 (+9)
Child 7	57	Child 5	65 (-3)
Child 8	56	Child F	64 (+26)
Child 9	55	Child 11	64 (+13)
Child 10	52	Child 8	61 (+5)
Child 11	51	Child 7	61 (+4)
Child F	38	Child 10	61 (+9)
Child 12	37	Child 6	53 (-10)
Child G	34	Child 12	32 (-5)

As can be clearly seen the control group (shaded grey) moved from all areas of the table to the top and middle, with four of the control group having the highest self-esteem in the class. This is not to say that because the rest of the class moved position their scores fell. Figure 4.3 shows the average increase/decrease of all groups in all areas of self-esteem: overall scores; sense of self scores; sense of belonging scores; sense of personal power scores.

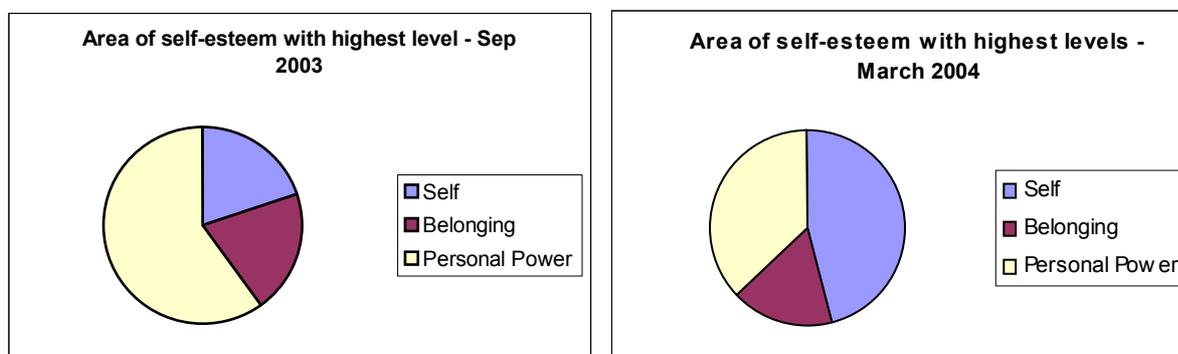
Figure 4.3: Self-esteem Components

Area of self-esteem	Control Group Average Rise/Fall	Non-control Group Average Rise/Fall	Class Average Rise/Fall
Overall	20	4	10
Sense of self	15	5	8
Sense of belonging	14	-1	6
Sense of personal power	10	2	9

Ultimately there is a class increase in each area but the control group (having targets set for all areas) have significantly higher increases in all components of self-esteem. Noticeably, the non-control group have a 1 point fall in their sense of belonging score which tends to suggest that they did not feel included, perhaps understandable when it is remembered that the rest of the class were having more time spent with them to share targets in certain areas of the curriculum.

The next consideration was the self-esteem component which most children had the highest score in at the start and end of the time period (Figure 4.4).

Figure 4.4: Highest Components of Self-esteem



This shows very clearly that in the initial stages most children’s highest score came in the “sense of personal power” component which is concerned with influence over people and that the children’s own opinions mattered. However, in the latter stages, most children’s highest score was in the “sense of self” component, which is concerned with awareness of who they are and what their preferences are. Interestingly, of the four children who had a decreased overall self-esteem score (all in the non-control group) only one child had a decrease in the “sense of self” component. This suggests that most decreases in scores came from other components, the most likely being in “sense of belonging” for reasons described above.

The benefit of this kind of analysis allows us to believe that formative assessment does have a positive effect on self-esteem and certainly the large rises in the control group scores seem to justify this. It must be remembered, however, that the sample involves Primary One children who would be settling into school in September, perhaps causing self-esteem to be at a lower ebb. It could also be argued, though, that perhaps “sense of belonging” scores should have increased as the children felt they belonged in school and felt more secure there. The fact that this component remained

the same, indicates that other factors have had more influence - with formative assessment undoubtedly being one of them.

Limitations of this kind of analysis lie mainly in human error as scores have to be counted accurately and questionnaires have to be completed fairly. As it is the teacher who would be completing the questionnaires as they have the best knowledge of the children involved, it would be easy to look back at the previous questionnaire to ensure development had taken place. For valid and reliable results it is recommended that the first scores are taken and the questionnaires removed. When completing the questionnaires for the second time, the teacher would be best to consider each child from a fresh viewpoint, judging their abilities at that time.

The postbox measuring motivation for learning did not provide such conclusive results. Coloured cards were posted during lessons which did and did not have a target in order for conclusions to be drawn. As can be seen in Figure 4.5 there is very little difference in levels of enjoyment.

Figure 4.5: Motivation for learning postbox (class results)

With a target		Without a target
28	%age of red cards	28
13	%age of yellow cards	14
59	%age of green cards	58

The results differ greatly when we consider Environmental Studies lessons where the control group were given a target and the rest of the class were not (Figure 4.6).

Figure 4.6: Motivation for learning postbox (control/non-control groups)

With a target (control group)		Without a target (non-control group)
5	%age of red cards	20
5	%age of yellow cards	31
95	%age of green cards	49

There are two ways to interpret these results:

1. The control group found these lessons highly enjoyable and the high number of yellow cards posted by the non-control group indicate that not having a target, and therefore not knowing what they have to do to be successful, meant they could not judge whether they enjoyed it or not.
2. The number of red and yellow cards (just over 50%) posted by the non-control group are not a reference to not enjoying the work but a reference to not enjoying feeling left out of having a target.

Both suggestions are included here as each are equally credible, though the author would tentatively conclude that, given the maturity of the sample, the second interpretation is more likely. This is a method of data collection that would not be continued with as the results appeared to be fairly unreliable and inconclusive.

4.4 Teaching Practice

The observation schedules used during self-evaluation time have been included in Appendix 5. A nursery nurse observed the author and interactions with children while the children and their interactions were observed. Looking at the help being offered, it was clear that many non-verbal signals were given, including wait time which is a feature of Clarke's constructivist teacher. Making multiple choice suggestions is also a constructivist feature, which the author improved on throughout the study. As for the children's responses to me, self-evaluation was initially very difficult for them which was why so much information was offered in the early stages. Many of the children offered answers to questions asked but, interestingly, the only children to expand on an answer or to ask a question in reply were children from the control group. This was possibly because they felt more comfortable with the author through spending more time together or perhaps it could be concluded that their self-esteem was rising to levels where they felt confident enough to challenge opinions.

Chapter 5: Conclusions

The main conclusions from the research are outlined below.

Objective 1: to review current literature

- Much of the recent literature is straightforward and very relevant. Formative assessment is at the forefront of developments in Scottish education and many researchers are not concerned with “Does this work?” but “How do we get this to work?” This study has indicated that this formative assessment strategy can work with Early Years children.

Objective 2: to develop a framework for assessment across the curriculum

- The target and dot system are easy to use and understood by the children, shown through their answers to interview questions.
- The dot system has also proved easily transferable across areas of the curriculum.
- Considering Piaget’s [3] warning that children in this age range cannot be “*critical, logical or realistic in their thinking*” it would appear from this study that there is truth in this for some children and not for others. Many of the children in the class were, over time, able to be critical of their work and give their work a fair grading. Some still, at the end of the research period, tended to code five dots on their work and when asked to justify their decisions realised that perhaps it was not worthy of that grading. This in no way makes this system fruitless for these children as the justifications are important in the process.

Objective 3: to investigate the ability of this approach in aiding progress and resolving self-esteem issues

- The spread of attainment, particularly in Language and Maths, reduced yet improved overall which is in agreement with Black and Wiliam’s [2] findings
- From viewing results from the control group it appears that giving targets across all areas of the curriculum aided Maths and Language progress. There may be several reasons for this: they may be more task-orientated;

they may know their own capabilities better; they may enjoy learning more. These are all tentative suggestions to explain this effect.

- Formative assessment can improve P1 children's self-esteem though further study would take account of the issues involved with settling into school
- Formative assessment increases virtually all the children's development of "sense of self"

Objective 4: to monitor the effects of the approach on teaching practice

- A happier classroom ethos is achieved as the teacher's focus is purely on the targets set and issues of effort and ability do not apply.
- More ownership and responsibility is passed to the children through sharing targets and collective decisions can be made about next steps.

Chapter 6: Recommendations

The following are a list of recommendations to be considered for further work as a result of this study.

1. To further explore the possibilities of implementing this approach, there are specific areas which need consideration. These include:
 - Decide how targets are going to be made – are they to come from school policy, curricular documents, national guidelines etc
 - Decide on the coding system which is most suitable for you and your class – colours, numbers, symbols
 - Provide a space in the classroom for learning intentions to be displayed
 - Explain task instructions before you give the learning intention as giving the learning intention too early can cause confusion – allow younger children to read the learning intention aloud
 - Devise success criteria in consultation with the children
 - Children code their work as it is completed – take the majority decision and record in your plan. If most children feel they haven't grasped the learning intention it will need to be revised
 - Use self-evaluation time effectively – a list of questions provided by Clarke [8b] is given in Appendix 2
2. A different approach should be adopted to measure the children's enjoyment of lesson to provide more conclusive results. It is important to know whether having a target affects motivation and enjoyment so a more effective system should be designed.
3. The study should be undertaken with a different year group to eliminate any settling into school issues which could have affected self-esteem.
4. According to Clarke [6a] there are three different types of Learning Intention – skills (to be able to), concepts (to understand) and knowledge (to know). In this study only one type (skills) was used so this should be developed to try out different types and measure their effectiveness on Early Years children.

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Appendix 1

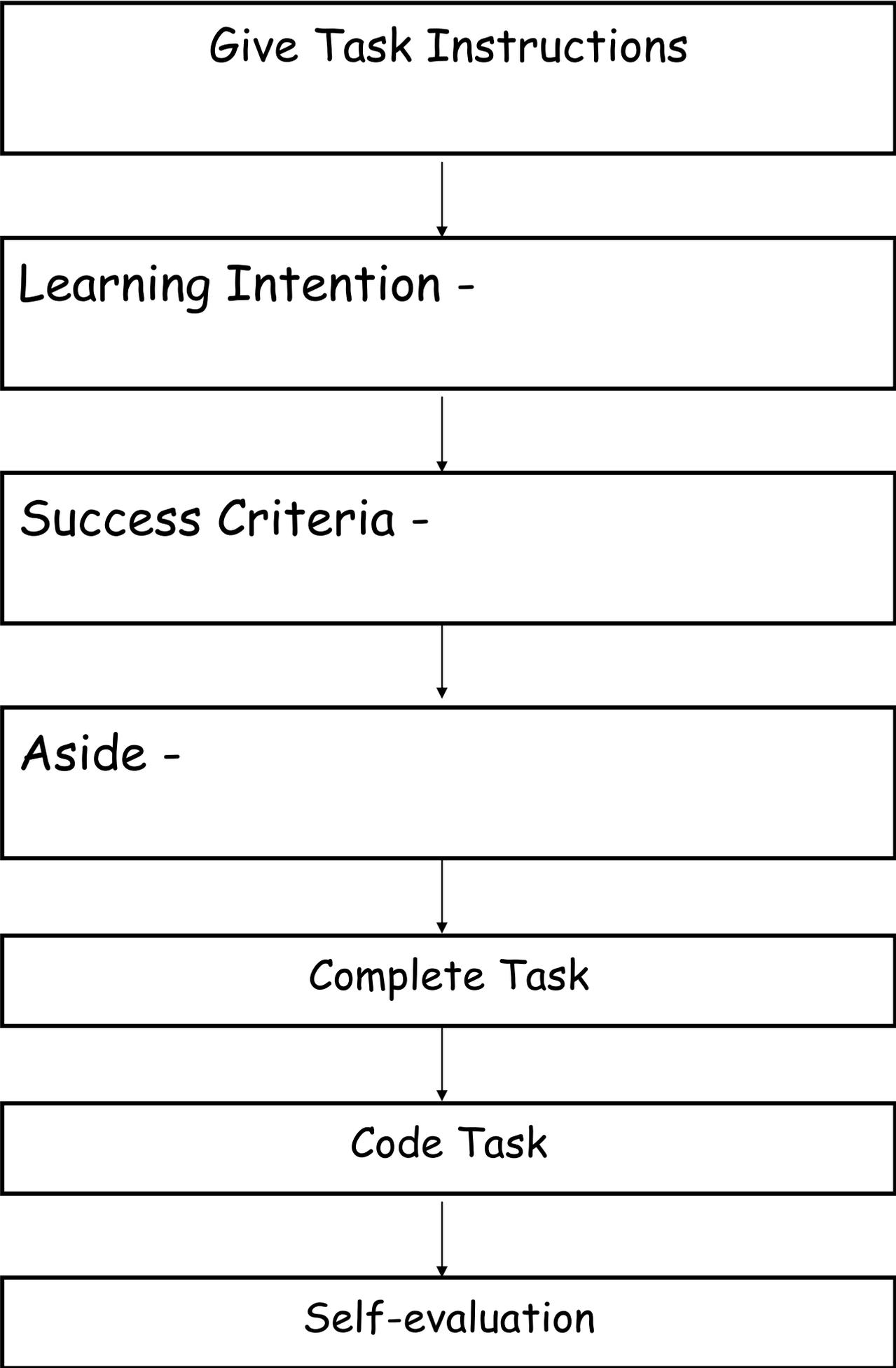
Appendix 2

Self-evaluation Questions

These examples are provided by Clarke [8b]. It is recommended that in initial stages only one or two questions are focussed on and the teacher models answers for the children to hear. The dots indicate where the words of the Learning Intentions should be filled in.

- What really made you think/did you find difficult while you were learning to...?
- What helped you (e.g. a friend, the teacher, new equipment, a book, your own thinking) when something got tricky about learning to...?
- What do you need more help with about learning to...?
- What are you most pleased with about learning to...?
- What have you learnt that is new about...?
- How would you change this activity for another group/class who were learning to ...?

Appendix 3



Give Task Instructions -
Mental Maths - reversing numbers in adding sums

Learning Intention - I can turn adding sums around.

Success Criteria - "Your sums will look different"
(given by a P1 child)

Aside - We need to know this because it will make any adding easier.

Complete Task

Code Work

Self-evaluation

Appendix 4

Interviews with P1 Children

1. First of all, I don't know very much about targets so I was wondering why you think Miss Webber gives you a target?

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2. How does having a target help you to learn? (If no suggestions then prompt using: does it make it easier or more confusing; more fun or less fun?)

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3. Does the target always make sense or are you sometimes unsure about what it means? What do you do if you are not sure?

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4. Miss Webber tells me that you put dots on your work. Is that right? How do you feel about 1, 3 and 5 dots? Are they easy to use?

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5. What about Miss Webber? Do you think the targets and dots make things easier or harder for her? Why is that?

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6. What would you tell other classes if their teachers were thinking about giving them targets and asking them to judge their work using 1, 3, 5 dots? What advice would you give them?

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Appendix 5

Appendix 6

