

Formative Assessment in an Infant School

by

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Introduction and Rationale

This thesis concerns itself with the use of selected formative assessment practices in a mainstream classroom of an Irish primary school. It explores how these practices can be implemented with 6- and 7-year-old children in daily classroom activities. The document *Assessment in the Primary School Curriculum: Guidelines for Schools* (NCCA, 2007a) serves as the principal source for the selection of the chosen practices, with the emphasis on child-led formative assessment.

The method chosen for this study is action research with conversations with children, their written-work and observation, as sources of data generation. I researched self-assessment to emphasise “the child’s active role in his/her own learning” (NCCA, 2007a, p. 9). Peer-assessment is explored in response to social-constructivist and sociocultural approaches to learning. The children express their views on these selected practices and on their learning.

Approaches to Assessment

The *Assessment Guidelines* (NCCA, 2007a) were issued to primary schools in 2008 and have yet to be broadly trialled. This document defines assessment as: “The process of gathering, recording, interpreting, using and reporting information about a child’s progress and achievement in developing knowledge, skills and attitudes” (p. 7). The guidelines focus on two principal approaches to assessment. *Assessment of Learning* (summative assessment) which focuses on “measuring a child’s cumulative progress towards curriculum objectives...” (NCCA, 2007a, p. 9), while in *Assessment for Learning* (formative assessment) “the teacher and child

agree what the outcomes of the learning should be and the criteria for judging to what extent the outcomes have been achieved” (NCCA, 2007a, p. 9). The literature suggests that formative assessment leads to increased self-esteem, metacognitive awareness and self-efficacy in the learner.

The Child and the Curriculum

. The *Primary School Curriculum* (Government of Ireland, 1999a) centres the child in his or her learning, with teaching and learning reflecting social-constructivist (e.g. Vygotsky, 1978) and sociocultural (e.g. Tharp and Gallimore, 1988) perspectives. Formative assessment occurs within a social context, with social interactions central to its use. This form of assessment, more than any other educational intervention, has been shown to increase outcomes in terms of children’s learning (e.g. Black and Williams, 1998). Recent reports, however, have noted that the emphasis in Irish primary schools appears to be on summative and diagnostic assessment (DES 2005; 2007; 2008b; 2009a; 2009b).

Rationale for this Research

I decided to investigate whether it was feasible to tilt the balance from summative to formative assessment in my school. This is an all-girls’ infant school in a middle-class urban setting.

In the *Assessment Guidelines* (NCCA, 2007a), the formative assessment practices appeared to require an increase in planning, documentation and time. It presented an unfamiliar method and language of assessment which seemed aimed at children older than those in my school. I focused my thesis on trialling some child-led formative assessment practices. I wanted to report not only my own perception of the new paradigm, but also to research the views of the children.

Thus, the questions to be explored are:

- How can child-led methods of self-assessment be incorporated into teaching and learning activities with 6- and 7-year-old children in a mainstream primary school classroom?
- What are the views of the children on these methods and on their own learning?

Literature Review

I interrogate here selected readings in relation to child-led formative assessment, including its practices and its impact on young children.

Assessment in Irish Primary Schools

The Chief Inspector's Report noted "a significant gap between stated assessment policies and actual assessment practice in classrooms" (DES, 2005, p. 8). Recent reports on schools (DES, 2009a; 2009b) show little evidence that change has happened yet. Inspectors noted "the difficulties that teachers have with assessment" (DES, 2008, p. 134). In addition, the *Primary Curriculum Review* (NCCA, 2008b), reported that "doing assessment" (p. 98) and having a "lack of time was a major assessment challenge" (p. 101) for teachers.

In evaluating SPHE in primary schools, inspectors found "very good assessment practices...in 15% of classrooms" (DES, 2009b, p.66), leaving 85% of schools, where "very good assessment practices" were not found. Thus, I decided to investigate whether the children could demonstrate and assess some of the skills required in the SPHE programme. Because Mathematics is timetabled daily, I also selected this area for trialling formative assessment.

What is Self-Assessment?

The NCCA *Guidelines* (2007a) define self-assessment as when children "look at their own work in a reflective way...and then set personal learning targets" (p. 14). The Association for Achievement and Improvement through Assessment [AAIA] extends this definition: "Self-assessment is seen as the pupils reflecting on WHAT has been covered...*self-evaluation* is more than this - it involves an analysis

of HOW they have learned” (AAIA, n.d., p. 10). Hence, it is the *evaluation* of one’s own learning that is seen as important.

Developing Self-Evaluation

Woodward and Munns (2005) also focus on self-evaluation. They advocate moving the children’s review of their work from simply assessing the content towards describing their feelings and thoughts as they learn (p. 3). This strategy aims to move the children’s understanding of their learning from content to cognition, from self-assessment towards self-evaluation leading to metacognition.

Metacognition

Metacognition transcends mere cognition. It is an awareness of the process of how one learns. Bronson (2000) demonstrates that development of metacognitive experiences was “one of the really central and significant cognitive-developmental hallmarks of the early childhood period” (in Whitebread et al, 2005, p. 43).

My intention was to reflect these findings in guiding the children towards an understanding of *how* they learned alongside *what* they learned.

The Learning Needs of Young Children

Children’s learning is currently viewed in a social-constructivist or sociocultural light, based on “theories that foreground the cultural and socially constructed nature of learning” (Anning, Cullen and Flear, 2009, p. 1).

Anning and Edwards (1999) describe the main emphases in learning as “the *what, who* and *how* of learning” and warn of the “danger in selecting just one of these emphases as the basis of practice” (p. 60). The new paradigm of assessment

attempts to reflect this emphasis, as socio-cultural theory also “informs our understanding of assessment” (Dunphy, 2008, p. 14).

Dispositions to Learn

Another key feature of early learning is the acquisition of learning-dispositions. These are attitudes which predispose a learner to participate in his or her own learning (Carr, 2001, p. 23) and to show independence, creativity, self-motivation and resilience (Bertram and Pascal, 2002, p. 93). Dispositions are commonly identified as developing when the child is motivated and actively involved.

However, Dweck and Legget (1998) and Smiley and Dweck (1994) identified that “by the age of 4 or 5 children have settled into one of two major dispositions...a disposition towards mastery of learning or a disposition towards approval...from others” (in Anning et al., 2009, p. 40). Girls in particular, who feel they are continuously unsuccessful, display “learned helplessness” (Dweck, 1975, in Clarke, 2008, p. 19). This signalled to me the importance of fostering self-efficacy and agency in the young child before these crucial inclinations develop.

Studies on the Use of Formative Assessment

Self-Esteem

Much of the research strongly suggests increases in self-esteem as an outcome of the use of formative assessment (e.g. Gipps, 1994; Black and Wiliam, 1998; Clarke, 2001; Harlen and Deakin Crick, 2002; Blanchard, 2008). Miller and Lavin (2007) studied the effects of formative assessment on the self-esteem of 10- to 12- year-old children in Scotland. These authors distinguish between self-esteem and

self-competence or self-efficacy and cite Bandura's (1990) view that "self-efficacy is independent of self-esteem" (p. 8). They found a cumulative effect of formative assessment on children's self-esteem (p. 16), which appears to have implications for whole-school practice.

One of the few studies focusing on six- and seven-year-old children was that of Tunstall and Gipps (1996), who studied what formative assessment meant to these children. The authors noted that these children perceived the teacher as having a "negligible contribution to their progress" (p. 191), instead projecting an attitude of ownership of their own work.

Self-Efficacy

Like Bandura (1990), others suggest that self-competence or self-efficacy may perhaps be as important as self-esteem in learners. Flavell (1979) asserts that "one hallmark of experts is that they know when they do not know something and they then have some general strategies for finding the...appropriate information" (in Anderson and Krathwohl, 2001, p. 59). Self-efficacy is highlighted also by Buhagiar (2007), who argues that "the capacity of students to judge their own work...is...a crucial component" (p. 50) in learning.

Whitebread, Anderson, Coltman, Page, Pasternak and Mehta (2005) explored the development of independent learning in children aged three to five years. They and others (e.g. Willes, 1983; Edwards and Knight, 1994; Hendy and Whitebread, 2000), found that children appeared "to become more, rather than less, dependent on their teachers during their first few years in school", (p. 42).

Perry, VandeKamp, Mercer and Nordby (2002) likewise found that young children were capable of "complex metacognitive processes" when their teachers

offered “opportunities... for the children to *evaluate their own work and that of others* [italics added]” (in Whitebread et al, 2005, p. 44).

Developing Formative Assessment Practices

The literature highlights three factors which are key to developing formative assessment practices with children: Learning targets, success criteria and teacher feedback to pupils. Clarke (2008) posits that “*learning objectives* and *success criteria* [italics added] are the tools which enable pupils to exercise power over their own learning” (p. 81).

Yeats’ (2005) action research project on formative assessment in Northern Ireland found that primary-school teachers reported that using learning targets (objectives) helped “reduce the heavy reliance that young children had on them during work” (p. 271). Presumably this is because the children are clearly told at the beginning of the lesson what the aim is and how to achieve it.

Success criteria

Having shared the learning intention, helping pupils construct success criteria appears to be the next step. These are “the ingredients, steps or possible features of the learning objective” (Clarke, 2008, p. 81). This identifies the gap between their current knowledge and the knowledge or skills they are aiming to achieve.

Hall (2001) suggests that accounts of relative gains made by ‘low achievers’ using formative assessment could be attributed to the making explicit of success criteria.

Teacher Feedback

Teacher-feedback is a crucial element in the formative assessment process. Kulik, Kulik and Bangert-Drowns (1990) reiterated the crucial role of teacher feedback and state that “in general, the gain was greater for lower attainers than for high attainers” (in Gipps, 1994, p. 130). Similar emphasis on detailed feedback was also highlighted by McColskey and Leary (1985), Crooks (1988) and Smith and Gorard (2005). The *Assessment Guidelines* (NCCA, 2007a) recognise that a grade or a score are “of limited value to the child” (p. 9) unless the teacher provides specific feedback on what the child needs to do.

Aistear: The Early Childhood Curriculum Framework

The *Aistear* framework (NCCA, 2009) acknowledges the specific learning needs of young children. These include using “a range of assessments” (NCCA, 2009, p. 10), which look for dispositions, skills, attitudes and values, knowledge and understanding. There is a strong emphasis in developing self-assessment skills through questioning and building on experiences (NCCA, 2009, p. 99).

Presentation and Analysis of Findings

Data collection took place over a period of four weeks. The tools and practices central to my use of this assessment approach were: Two Stars and One Wish (NCCA, 2008), Thumbs, Talk Buddy, KWL-grids, evaluation-sheets and rubrics (NCCA, 2007). Table One presents an overview of the methods used within the curriculum context of Mathematics and SPHE.

	S.P.H.E.		Mathematics	
	<i>Strand/ Unit</i>	<i>Data Collection</i>	<i>Strand/ Unit</i>	<i>Data Collection</i>
Week 1	Myself/ Safety and Protection	Journal – observe making posters, no success criteria Peer-assessment , ‘Two Stars and One Wish’	Shape and Space / 2-D shapes	Journal - observe (a)peer assessing ‘Talk Buddy’. (b) tessilation- self-evaluate with Buddy Taped conversations Artefact – learning log
Week 2	Myself/ Safety and Protection	Journal - Use of success-criteria to design revised poster Artefact – Photo both posters	Shape and Space / 3-D shapes	Artefacts - KWL-sheets on 3-D shapes Taped conversations Journal – observe children assessing own work (‘Thumbs’)
Week 3	Myself/ Safety and Protection	Journal – record peer-assessment of verbal communication Artefact – rubric (self-assessment)	Shape and Space / 3-D shapes	Artefacts – Rubrics on 3-D Journal – observe children on activity Taped conversations
Week 4	Myself and the Wider World	Journal – observe group-work, presentation Artefacts – Self-evaluation sheet Conversation -group conversation	Data	Artefact – Rubric with graph. Journal – observe children on task, peer-assessing with ‘Talk Buddy’ Taped conversations

Table 1: Overview of strands/units in Mathematics and SPHE and methods of data collection

Before the study commenced, I explained to the children that I was studying in college and that I would like their help in finding out what they thought

of the practices I had introduced in class. I explained that I would need their parents' permission, and theirs, before I could tape or write about them. I said that if they didn't want to be taped, that would be fine. All the children's names in this thesis are pseudonyms.

Together we read the letters that I intended sending to the children's parents and to them and I asked for any questions. I also included a Plain Language Statement for parents. Both letters were placed in the same envelope, so that children and parents could discuss the research together. The choice of refusing or rescinding permission was again emphasized. The importance of anonymity means that the parents of the children involved in this study were assured that neither the area, the school, nor in particular, the children would be identified.

With the focus here on methods of assessment and reaction to their use, rather than on individuals, I am confident that anonymity, confidentiality and lack of personal detail, will defend their privacy.

Introducing Learning Targets and Success Criteria

In SPHE, the children were working within the strand unit 'Safety and Protection'. The learning target was: Design a poster to show the 'Stay Safe' rules - "Say 'no'; get away; tell someone" and no design guidelines were given. The completed posters were displayed and the class evaluated each one. The emphasis was on communicating a message, not on the visual arts aspect, which led to a discussion of the characteristics of good visual communication. I then explained that these were called success criteria, because they showed how we can be successful in reaching learning targets

Using Success Criteria as a Basis for Peer-Assessment

In the next lesson, the children used the identified success criteria to inform the design of a new poster. Again, the revised posters were displayed and evaluated by the class, using the criteria as reference. The contrast between the initial posters and the revised ones which used success criteria displayed much improvement in visual communication.

In subsequent SPHE lessons, the same strategy was used to improve verbal communication of a message.

Difficulties with peer-assessment

All seemed to believe that the peer-assessment exercise was worthwhile, but in conversations with the children the issue of privacy arose, where several objected to the public nature of peer-assessment. So, although I found that the results appeared to be positive, the children themselves had a different view.

Self-Assessment Using Evaluation-Sheets

During the fourth week of the research, the children used evaluation sheets to evaluate their own communication skills. I found that the use of success criteria was a significant factor in strengthening the children's understanding of what to *do* in each lesson. Each child was aware of what was needed to achieve success and reflected that in her evaluation-sheet. Many children made reference to the targets and success-criteria, which appears to indicate that they had developed a strong "understanding of themselves as learners" (Jervis, 1996).

Using Peer-Assessment in Mathematics: ‘Talk Buddies’

I initially used non-graphic approaches to assessment in Mathematics. Having listed the learning targets and success-criteria for each day’s lesson on the whiteboard, I then used the ‘Talk Buddy’ method of peer-assessment to get the children to evaluate their work

Using Graphic Tools

KWL Sheets

The KWL-sheets served a useful purpose in planning lessons and allowing the children to set personal targets for themselves and evaluate their learning. However, I found that these were focusing the children’s attention on the *context* and *content* of the learning rather than the *process*. My intention was to focus their attention more on *how* to learn. To move the children beyond self-assessment and towards self-evaluation (Woodward and Munns, 2005; AAIA, n.d.), I modified the KWL-sheet and produced a KWLH-sheet (**H**ow I learned).

The ‘h’ element of the KWLH-sheets was frequently mentioned by the children. Sorcha confirmed that knowing *how* to learn could transfer between subjects: “If you wrote down ‘PC’ and ‘books’ and you forgot the next time you were doing *another thing*, you ... check up the page and you can see how you did it and you can find out stuff by doing that again”. The children appeared to have a strong awareness of their ability to learn and projected what Tunstall and Gipps (1996) describe as an attitude of ownership of their own work.

Rubrics

Montgomery (2001) tells us that “using rubrics as they process through an authentic learning task encourages the reflective practices of students...” (p. 54). The NCCA (2007a) recommends that when introducing rubrics initially to a class, “it should be in a simple form...until the children become familiar with it” (p. 84). Rubrics proved useful for documenting success-criteria and for getting the children to mark their achievement of these criteria.

Summary of Findings

Some issues arose in my trialling these practices and these can be summarised as follows:

- Formative assessment practices must be integrated within teaching and learning.
- Rubrics were useful in documenting success criteria for children as learned.
- The second attempt by the children to communicate visually and verbally showed clear improvement when success criteria were shared with them.
- The children displayed strong metacognitive awareness.
- The children displayed a sense of ownership of their work.
- Although graphic-tools serve specific purposes in directing cognition, they were less important than learning targets, success criteria and feedback.
- Using child-led formative assessment made “learning more enjoyable, more motivating and more successful for each child” (NCCA, 2007a, p. 8)..

The Views of the Children

Learning targets and success criteria proved popular, with comments like: “I met my target”, “I can still hear the people speaking in my ears”, “we know what we’re learning”, “it’s like you remember what you have to learn” and “it makes it clear what I have to do”.

The use of ‘Thumbs’ for self-assessment was popular with the children. Hannah described using Thumbs to show the teacher that “I don’t know it at all (*thumbs down*)”. Katie finds the ‘Thumbs’ also an easy way for the teacher to know “which ones need help”.

The children found the KWL/ KWLH-sheets useful and enjoyable to use. Some feedback includes: “love them...you get at the end to write all you’ve learned”, “you ask a question and you can find out, not just that question, but you find out even more”, “help us learn and to find out what we know and see how we learned” and “if you don’t know *how* to learn, then it doesn’t make any sense”.

Most children found that rubrics were a useful way of indicating learning, for example: “Shows you know the stuff” and “you could say that you know a lot and then you have it really good”.

Privacy

Although all children enjoyed the positive peer feedback, they were unhappy with negative feedback. Some of the comments from the children included: “It’s not nice” and “they kind of make you feel bad”, “I try to talk but she keeps talking and I don’t get a go”, “because other people think that the ting (sic) is easy and you don’t” and “it hurts people’s feelings sometimes”. The overall response of the children indicated unhappiness with the lack of privacy in their peer-assessments.

Significantly, the children described as ‘more able’ expressed more dissatisfaction with this practice.

However, peer-assessment also attracted some positive comment including: “It helps that we can learn from friends”, “People tell me what to watch (sic) out for”, “The wish help (sic) you”.

As a result of this feedback, I asked the children to use only success criteria when commenting on the other’s work. This gave parameters to the feedback. Teachers may need to be aware of the sensitivities that young children may experience in having their work assessed in what is ultimately a ‘public’ manner.

Self-Efficacy and Metacognition

In writing learning logs, the children were very aware of their own efficacy and metacognition. They suggested a variety of learning strategies, reflecting the ‘intelligent novices’ of Brown et al. (1993), who “may not have the background knowledge needed in a new field, but they know how to go about gaining that knowledge” (in Gipps, 1994, p. 25). Sally says: “You can see how you did it and you can find out stuff by doing that again”.

Summary of the Findings on the Children’s Views

- Children found learning targets and success criteria helpful for showing the rationale of a lesson.
- They appreciated self-assessment practices that enabled them to request feedback.
- Graphic-tools enabled them to identify their successes or otherwise.

- They demonstrated strong metacognition and self-efficacy.
- Privacy in their assessments arose as an important issue in this study.
- Children described as ‘more able’ academically appeared to particularly dislike the lack of privacy in being assessed by their peers.

Conclusions and Implications of the Study

Although the literature discusses the benefits of formative assessment in raising educational standards (e.g. Black and Wiliams, 1998), developing self-efficacy (e.g. Gipps, 1994; Clarke, 2001; Harlen and Deakin Crick, 2002; Blanchard, 2008) and increased metacognition (e.g. Bronson, 2000; Woodward and Munns, 2005), there is not much discussion of the affective issues which arise with its use.

Privacy

Many of the children perceived peer-assessment as threatening and humiliating. Their comments do not appear to reflect claims for increased self-esteem in users of formative assessment (Black and Wiliams, 1998; Clarke, 2001).

Two works advise caution in relation to peer-assessment. Tunstall and Gipps (1996) researched 6- and 7-year-old children's understanding of assessment and noted: "Other children's negative evaluative judgments of their work...caused most adverse comment among the children" (p. 202). Montgomery (2001) advises that peer-assessment should be used with caution in primary schools, as assessments are usually done by experts and "such expert status is rarely attained by the typical elementary student" (p. 93).

Why did some children feel so strongly about their privacy? It may be a reflection of reliance on the teacher, echoing the views of Hendy and Whitebread (2000) of children's dependence (in Whitebread et al., 2005, p. 42). It might be a manifestation of the teacher as the medium through which learning is distilled. Perhaps children, whose voice is not often acknowledged, have difficulty accepting that their peers could offer worthwhile feedback. It may result from the summative

nature of usual classroom assessments. In time children may come to see their learning and assessments as ipsative and not always norm-referenced.

Classroom Relationships

This research underlined the need for a reciprocal relationship between the teacher and the children.

Hall and Burke (2004) found that effective teachers spend time “building...trusting relationships” so that pupils have a context “to articulate their developing ideas” (p. 60). Black and Wiliam (1998) state that the teacher needs to have the confidence not to “direct the pupil toward giving the expected answer...(where)...the object of the exercise is to work out...what answer the teacher expects to see or hear” (p. 7).

Implications for Practice

Classroom Level

Torrance (2007) warns that by focusing completely on predefined success criteria, we risk reducing learning to this list. Torrance and Pryor (1998) advise teachers to use divergent assessment, which “aims to discover *what* the learner knows, understands or can do”, rather than convergent, which “aims to discover *if* the learner knows, understands or can do...” (p. 153). This signals a warning to teachers not to narrow formative assessment to ticking a list, which could tilt the focus, albeit unintentionally, towards summative assessment.

A suggested approach to introducing child-led formative assessment:

- Modelling practices such as ‘Thumbs’ as the children look at their work

- Explain and use learning targets
- Introduce success-criteria
- Use success-criteria as the touchstone for peer-assessment, if children agree
- Introduce graphic-tools as the children develop proficiency in self-assessing.

School Level

The cumulative effect of formative assessment on self-esteem signals the importance of a whole-school approach Miller and Lavin (2007). Comment-only feedback, instead of scores (Smith and Gorard, 2005) may need to be instigated. A whole-school approach is to be recommended to maintain the benefits of these practices.

National Level

On a national level, the education of practitioners in formative assessment is essential (Black, Harrison, Lee, Marshall & Wiliam, 2003, p. 12). While the *Assessment Guidelines* (NCCA, 2007a) and the *Aistear Framework* (NCCA, 2009) are welcome aids, a more direct targeted campaign is needed to re-align practice with theory.

Assessment Guidelines (2007a): Recommendations

- The rationale for formative assessment needs to be fore-grounded and its description extended
- Mutual respect and trust between teacher and child is an important factor

- Developing self-efficacy and metacognition in children involves adults informing themselves of theories on young children's learning.
- The unique learning needs of the young child need elaboration, prioritising the development of “dispositions...skills...attitudes and values...knowledge and understanding” in young children (NCCA, 2009, p. 74).
- The importance of extending self-assessment towards self-evaluation needs to be emphasised.

Conclusion

This study shows that the use of child-led formative assessment works well in a mainstream classroom. The use of formative assessment involves developing a culture where the children are actively involved in their learning. Most literature does not address children's perspectives on the practice. This study raises questions about the public nature of peer-assessment. Should adults impose new practices, especially when the benefits are well documented (see Black and Wiliams, 1998) on children for 'their own good', regardless of the children's views?