

## REFLECTING ON FEEDBACK AS “FEED FORWARD” - A MEDIATED ASSESSMENT PRACTICE



~ Celia Booyse ~

### 1. INTRODUCTION

When thinking about teaching-learning-assessment cohesion, the purpose of assessment as learning, mediation, the importance of feedback and self-regulation of learning comes to mind as well. Just as a thermostat adjusts to room temperature, effective feedback helps maintain a supportive environment for learning. Quality feedback should be accessible to a learner – clear and concise, using familiar language from your lesson/classroom. To ensure that learners make further progress we need ways to monitor how they have acted on their feedback and can articulate their next steps.

If assessment is viewed as a systematic collection of information about the learner’s learning, using the time, knowledge, expertise and resources available in order to inform decisions about how to improve learning (Walvoord, 2004: 2-5 & Lambert and Lines, 2000: 4), assessment becomes an intentional teaching and learning strategy. This will result in clarifying, sharing, and understanding learning intentions and criteria for success and engineering effective classroom discussions, activities, and learning tasks that elicit evidence of learning.

Assessment needs to be more than gathering evidence of how well the learners achieved outcomes, but should include the *use of the assessment information for improvement*. And how can this be done? Firstly, through mediation and by activating learners as instructional resources for one another and getting learners involved with each other in discussions and working groups can help improve learner learning. Secondly, by providing feedback that moves learning forward and working with learners to provide them with the information they need to better understand problems and

solutions. All the activities undertaken by teachers and learners in assessing themselves could be used as feedback to modify the teaching and learning activities in which they are engaged (Black and Wiliam, 1998a: 139-148). Feedback in formative assessment could be in reaction to from a puzzled look of a learner to an analysis of a learner's response to a formal test. The crucial fact regarding the evidence is that the teacher should be able to use the evidence in a process to guide the learner to improved understanding, improve the quality of teaching and increase the efficacy of assessment. The intent is to use the information about learning to *modify the teaching and learning activities in which teachers and learners are engaged*.

## **1.1 FEEDBACK AS LEARNING IN A "FEED FORWARD" PROCESS**

Feedback should promote learning. If we want assessment to be effective, transparent and more suited to the purpose of learning, then the use of comments indicating where learners are, where they need to go, to diagnose problems and address them, becomes central to teaching and learning. Effective, formative feedback should recognize what the learners have achieved, and point to what comes next; it should reward achievement, and point to directions of improvement in ways that guide that improvement.

For it to be really useful, formative feedback needs to relate to the outcomes assessed. The comments need to engage with the content and the substance of the particular task. For example, "Write neater", is not a useful comment when a learner cannot understand why her solution to a maths problem was not correct. A learner who gets an essay back with spelling corrections as the only "comments" is bound to assume that spelling is the important thing that the teacher looked at. A comment like "a good effort", is encouraging and makes the learner feel good, but still doesn't help her to write a better story next time. Giving useful, formative feedback is a skill that needs to be learnt and practiced.

### **1.1.1 Feedback to improve learner performance**

*The only important thing about feedback is what learners do with it.* The teacher should ask herself/himself how the praise, guiding questions and encouragement would help the learner to improve. It would be worthwhile considering what would be best in a particular context, e.g. whether it would be best giving general feedback to the whole class, especially where you find that nearly all the learners are struggling with a particular concept. This might provoke more questions and points of discussion and change the feedback session into a teaching and learning experience.

---

### **1.1.2 Keeping purpose in mind**

At its simplest, feedback might identify the quality of the work, as happens when for instance a typing teacher tells a learner that his/her typing speed is 45 words per minute. More helpfully, the feedback might indicate the gap between the current performance and the desired performance—for example, by also telling the learner that his target speed is 50 words per minute. More helpfully still, the teacher might tell the learner that his/her typing speed will increase if he/she uses only the thumb to depress the space bar. In other words, the best feedback provides information not just about current performance, but also about how to improve future performance.

For example, a visual arts teacher might give a learner advice on how to develop a piece of sculpture or a painting, and a language arts teacher might give feedback on the draft of a story so the next draft is better.

*The real issue is purpose.* The main purpose of feedback is to improve the learner's ability to perform tasks he or she has not yet attempted. If the language teacher advises the learner that his story would be improved by swapping around the third and fourth paragraphs, the learner can do this, but he will learn little. The intellectual heavy lifting has been done by the teacher, not the learner. Similarly, if a mathematics teacher corrects a learner's arithmetic errors, there's nothing left for the learner to do but note how many of her calculations were incorrect. It's easy to see why such forms of feedback are unlikely to be effective. And if we don't keep the purpose of feedback in mind, the same problems may also crop up in more subtle ways.

When we realize that most of the time the focus of feedback should be on changing the learner rather than changing the work, we can give much more purposeful feedback.

### **1.1.3 Give useful feedback**

Ausubel (1968: vi) noted that the most important single factor influencing learning is what the learner already knows. Ascertain this and teach ... accordingly. Yet many a time teachers may respond by saying: "You should be able to do this. You're in Grade 8"—which, when you think about it, is not helpful.

Teachers need to start from where the learner is, not where they would like the learner to be. The information obtained from looking at the learner's work and give feedback that will move the learner's learning forward, that is considered as useful feedback.

---

#### 1.1.4 Assign tasks that illuminate learners' thinking

Designing tasks, that in Ritchhart and Perkins's (2008) phrase, "make thinking visible", takes time, but front-loading the work in this way makes it much more likely that teachers will be able to provide useful feedback.

For example, the question below probes learners' understanding of the arithmetic mean of a set of numbers. However, rather than asking learners to calculate the mean of a set of numbers, as most standardized tests do, the question explores whether the learners really understand the concept of the mean:

What can you say about the means of the following two sets of numbers:

Set A: {2, 5, 12, 7, 0}

Set B: {2, 5, 12, 7}

- (a) The two sets have the same mean.
- (b) The two sets have different means.
- (c) It depends whether you choose to count the zero.

Many learners choose option (c), which is, of course, incorrect. It takes authentic understanding of the definition of the mean to realize that there is no discretion about whether to count the zero. *(Note: The only correct response is option (b)).*

Similarly, in science, the following question helps teachers figure out whether learners understand the important distinction between climate change in general and the specific issues related to the depletion of the ozone layer through the use of chlorofluorocarbons.

What can we do to preserve the ozone layer?

- a. Reduce the amount of carbon dioxide produced by cars and factories.
- b. Reduce the greenhouse effect.
- c. Stop cutting down the rainforests.
- d. Limit the numbers of cars on the road when the level of ozone is high.
- e. Properly dispose of air conditioners and fridges.

What is particularly interesting about this question is that option (e) may look like a fifth option included just to increase the number of choices, but in fact it's the only correct response.

---

### **1.1.5 Make feedback into detective work**

One way of making sure that learners actively use feedback, is to make responding to the feedback, a task itself. In other words, make feedback into detective work.

In an article in *Educational Leadership*, Dylan William (2012) mentioned Charlotte Kerrigan, a language arts teacher who sometimes responds to her learners' essays by writing her comments on strips of paper. She then gives each group of four learners their four essays, along with the four strips of paper. The group's task is to figure out which comments apply to which essays.

Such a practice, ensure that learners, the recipients of feedback, do as much work as the teacher who provides the feedback. Making feedback into detective work encourages learners to look at the feedback more closely and to think about their original work more analytically.

### **1.1.6 Build learners' capacity for self-assessment**

Where teacher and learner are working collaboratively, a meta-cognitive element of "*I know what I've learned and why*", is vital for both. Teachers can promote learners' metacognition (reviewing yourself how you learn), by guiding the learners to become more conscious of their learning skills by asking them to reflect on effectiveness, evaluate strategies, own understanding and particular skills.

To develop the ability to engage in self-reflection and for learners to be able to identify the next step in their learning, deepen the ability to seek out and gain new skills, new knowledge and new understandings are needed. Teachers can equip learners with the desire and the capacity to take charge of their learning through developing the skill of self-assessment. Commencing with the assessment process by including an explanation and giving reasons for instance why certain tasks are important and talk about links and goals will encourage learners to get involved in self-assessment. In this sense self-reflection is encouraged by mediation and will result in willingness to engage with the assessment task. A good comprehension of set criteria, the knowledge of how to apply a particular set of outcomes in answering questions and being able to value one's own work, develop learners' capacity for self-assessment so that they can become reflective and self-managing.

Teachers who are teaching younger learners may make use of the "traffic-lighting"-method where learners assigned red, amber or green to a piece of work, according to the degree in which the learners did or did not understand the task or work, or to indicate where they found it to be valuable. The practice of peer assessment enables learners to challenge each other's judgements of

---

their work. This may spark further discussion and debate, which in turn may enhance the possibility of formative feedback and the improvement of planning for the next level of learning.

A good example of the importance to build the capacity for self-assessment is to look at music teachers. Instrumental music teachers commonly get only 20 to 30 minutes each week with a learner. But these teachers realize that most of the progress a learner makes in playing a musical instrument happens when the learner practices at home. A learner could improve his or her performance very little in 30 minutes a week. Therefore, many instrumental music teachers spend most of their instructional session ensuring that learners have the skills to practice productively—which requires that learners can evaluate how well they've performed and make adjustments accordingly.

The main problem with learners who lack the ability to apply self-assessment or to attach value to activities completed, appears to be not the problem of reliability and trustworthiness, but rather a lack of understanding of the worth (value) of work in relation to set criteria. Learners can only assess themselves when they have a sufficiently clear picture of the targets that their learning is meant to attain. Surprisingly, many learners seem not to have clarity on expectations and appear to have become accustomed to receiving classroom teaching as an arbitrary sequence of exercises with no overarching rationale. It requires hard and sustained work to overcome this pattern of passive reception. When learners do acquire such ability to reflect and attach value, they become more committed and more effective as learners: their own assessments become an object of discussion with their teachers and with one another, and this promotes even further the idea that reflection is essential to good learning.

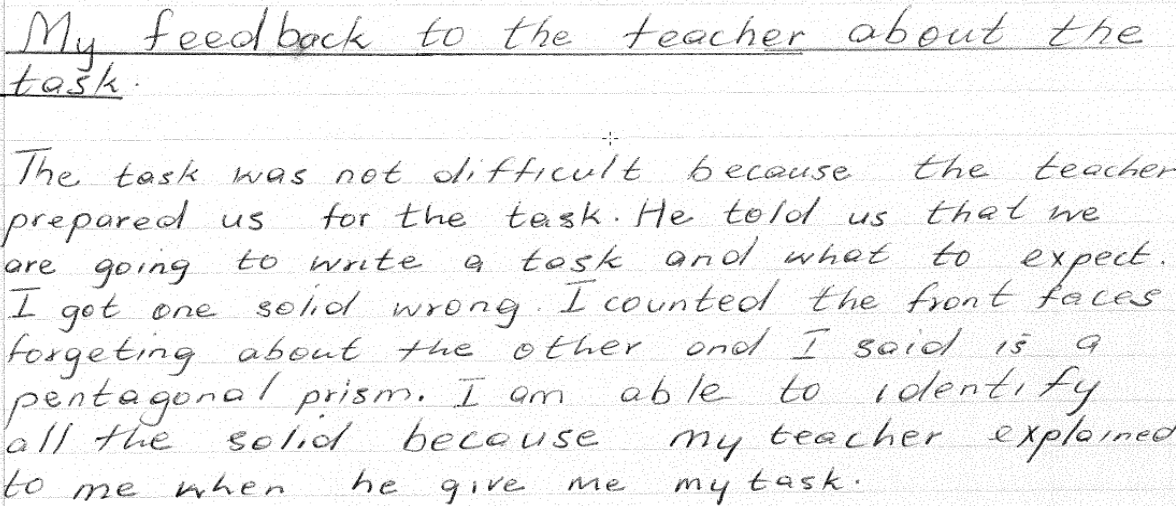
It is important; to develop learners' capacity for self-assessment, but at the same time to recognise that it can be emotionally challenging to assess one's own work, Therefore, it is advisable starting with samples of anonymous learner work, and asking learners to describe what feedback they would give the creator of the work. After that, learners can move on to the work of actual peers, and finally, to self-assessment.

To start with, a simple approach, sometimes called "plus, minus, interesting," is all that is needed. At the end of a task, ask learners to identify something they found easy about the task, something they found challenging or difficult, and something they found interesting. Such reflection develops language skills and helps the learners become clear about what areas they need to work on.

---

With any task that has a qualitative element rather than just being correct or incorrect, learners can be asked to identify what they would do differently if they did the task again. In science, for instance, learners might be prompted to think about what they would change to improve a science experiment they conducted. Sometimes it's appropriate to ask learners to make the changes they have identified, such as redrafting a literary essay in language and literature. Sometimes, however, it's useful to tell learners in advance that they will not have to make the improvements they have identified, so they do not have an incentive to say that the work is fine as it is. The purpose of this exercise is to develop the learner's own critical eye.

Learners need to question their own understanding and compare their version of the truth with that of the teacher and fellow learners in order to arrive at a new level of understanding. The ability to assess own work and to give feedback on the experiences of an assessment task and process, seems to create a dynamic interaction between task, teacher and learner. Such ability not only develops an awareness of each other's understanding but also reveals misconceptions. This task-learner-teacher interaction is a process to knowledge-building and encompasses foundational learning and socio-cognitive dynamics. In particular, the interaction involves making a collective inquiry into a specific topic, and may therefore lead to deeper understanding. It is clear that realising and identifying new goals are essential parts of the learning process.



My feedback to the teacher about the task.

The task was not difficult because the teacher prepared us for the task. He told us that we are going to write a task and what to expect. I got one solid wrong. I counted the front faces forgetting about the other and I said is a pentagonal prism. I am able to identify all the solid because my teacher explained to me when he give me my task.

Figure 1: Learner feedback on Mathematics task

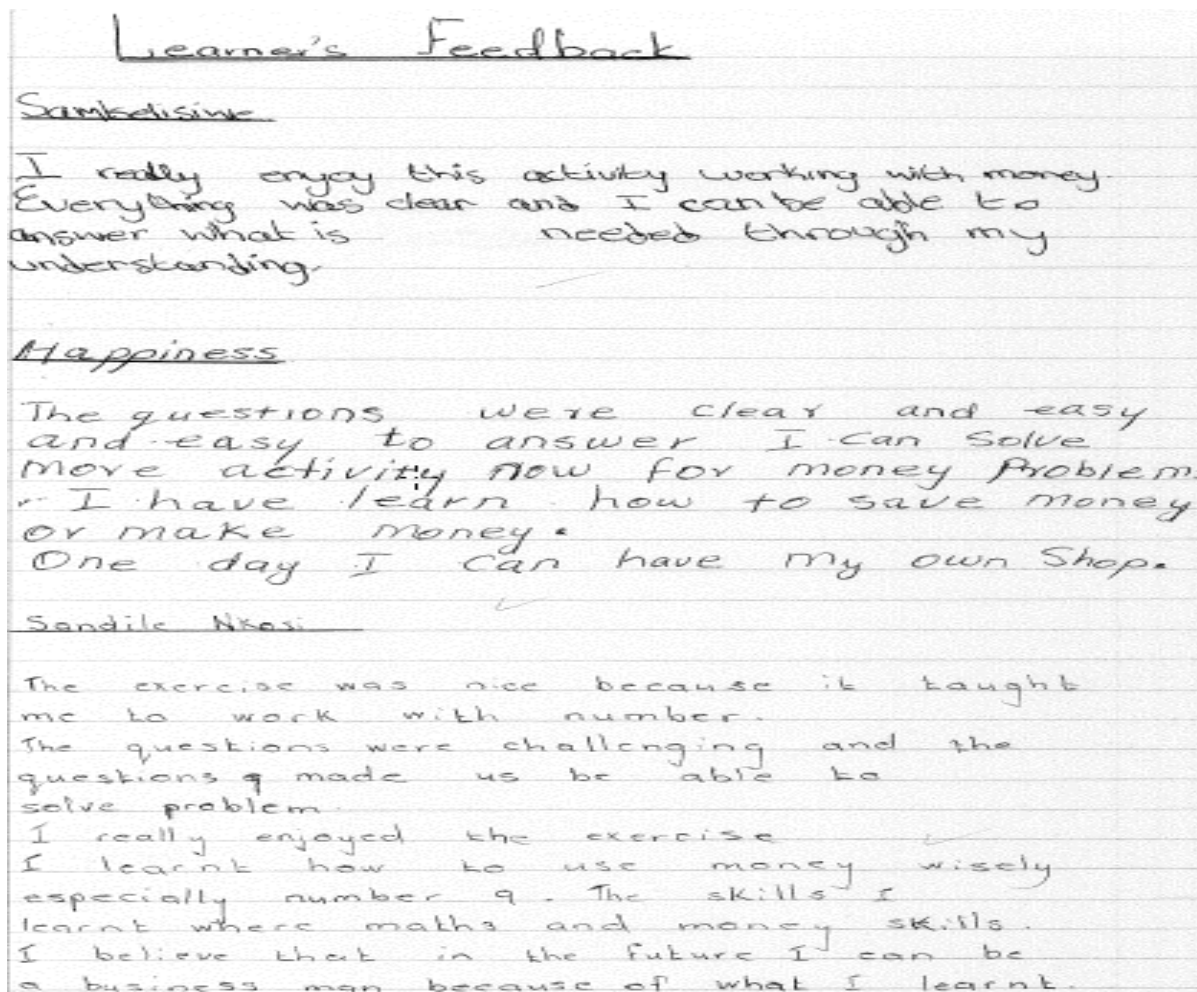


Figure 2: Feedback from learners on money activity

What this amounts to is that self-assessment by learners is an essential component of formative assessment. What is evident from the examples above is that the learners want to learn – therefore the feedback on their efforts show in some instances a desired goal that they want to achieve, there is evidence about their present position, and some understanding that more is required of them than their current level of understanding.

Significantly, some learners from these examples realized that there is still a gap between their current understanding and what is actually required from them as mentioned in the learner's feedback in *Figure 1* regarding the experiences in the Mathematics task.

### 1.1.7 A trusting relationship for feedback

In the end, it all comes down to the relationship between the teacher and the learner. To give effective feedback, the teacher needs to know the learner—to understand what feedback the learner needs right now. To receive feedback in a meaningful way, the learner needs to trust the



teacher—to believe that the teacher knows what he or she is talking about and has the learner's best interests at heart. Without this trust, the learner is unlikely to invest the time and effort needed to absorb and use the feedback.

The only thing that matters is what the learner does with the feedback. If the feedback you're giving your learners is producing more of what you want, it's probably good feedback. But if your feedback is getting you less of what you want, it probably needs to change.

The feedback on a first task will for sure influence the learners' approach to the next task. Making only negative comments could be really demotivating, while positive reinforcement of achievements has a stimulating and attitude building effect. The teacher needs to make sure the feedback is clear and practical, in order to make it easier for the learner to make use of the feedback in a step-by-step way.

Under-performers benefit in particular a lot from feedback that concentrates on specific problems with their work, and gives them both a clear understanding of what is not yet mastered and which achievable targets they still can aim for. Learners can accept and work with such messages, provided that they are not clouded by overtones about ability, competition and comparison with others.

Finally, teachers need to talk to the learners and to ask them, "How are you using the feedback that I am giving to help you learn better?" If they can give a good answer to that question, then the feedback is probably effective. However, if they cannot, they should look for what was useful and build on that.

#### **1.1.8 Feedback to enhance emotion and motivation**

Bruner argues in his book *Toward a Theory of Instruction* (1966) that encouraging (motivating) learners to discover principles might drive the success of teaching and learning. This means that the more constructive content is structured, involving the learners to think, discuss and explain their understanding of the content and the outcomes of an assessment task, the more encouraged the learners will participate in the teaching-learning situation. A more motivated learner shows more persistence in the effort to complete a task successfully, which of course leads to enhanced cognitive processing of subject content and concepts.

---

Teachers should be aware of the impact that comments, marks and grades can have on learners' confidence and enthusiasm. Comments that focus on the work rather than the person are more constructive in motivating learners and in order for effective learning to happen.

From an investigation done in 2009 and 2010 (Booyse, 2010), teachers described their own feelings about assessment as “useful but scary”, and when not performing well they associated the following words with the feeling (emotion): “inferior, sad, scared, insecure, shaky, and exhausting”. The participants in the investigation described their and the learners' feelings in instances of good performance as: “exciting, happy, encouraging, good experience, sunshine”. The words associated with the emotions remind of the research done by Richard Lazarus, a pioneer in the study of emotion and stress, especially their relation to cognition, which he described as “the marriage between emotion and thought” in his 1991 book *Emotion and adaptation* (pp. 19-22). He was renowned for his cognitive-mediational theory within emotion which holds that cognitive activity may be conscious or unconscious and may or may not take the form of conceptual processing. This has also much to do with the suggestion that emotions (affect heuristics, feelings and gut-feeling reactions) are often used as shortcuts to process information and influence behaviour as described by Joseph Forgas (1995:43-58).

It is clear that emotion plays an immensely significant role in teaching, learning and assessment, in particular on the ability to process information and be involved in the teaching-learning situation on a particular affective domain level. There appears to be a connection between the receiving, responding, valuing and organising levels of the affective domain with the processing of information (data) as described by Forgas (1995:35-66).

To link the levels in the affective domain with “substantive processing” will most possibly be affected by emotion (mood) which seem to be:

- The *valuing* level of the affective domain, where the learner is expected to demonstrate a preference or display a high degree of certainty regarding an opinion and
- The *organising level*, where the learner has to combine different values, information, and ideas and accommodate them within his or her own schema by comparing, relating and elaborating on what has been learned.

This has implications for the approach to follow in the classroom, teaching-learning and assessment practice, the atmosphere in the classroom and the way feedback is used as learning.

---

### **1.1.9 Effective feedback based on outcomes and criteria**

*What does consistent and transparent feedback look like?* Guiding documents for assessment – something like a rubric – is one way to frame the feedback which provides a guide to keep the feedback consistent and transparent.

Learners should understand why and how they are going to be assessed. When learners have a good understanding of what it is they are attempting to achieve, the achievement becomes quicker and easier. Understanding and commitment follows when learners are involved in determining goals and identifying criteria for assessing progress. Learners feel more comfortable in the teaching-learning situation if a teacher communicates assessment criteria in terms that they can understand or by providing examples of how the criteria can be met in practice. Grasping such assessment criteria enables learners to fare better in attempting peer- and self-assessment.

To improve the effectiveness of assessment, learners need to exactly understand the expectations in the task, otherwise the teacher will not be able to clearly identify and pinpoint the problematic areas. The aim will be for teacher and learner to establish what they know, what they want and have to know and do, what was already mastered and how it is known that the content and skills were mastered. A clear understanding of what is expected will also guide the format and determine the quality of feedback. The alignment of assessment tasks with the outcomes will ensure that the teacher will only assess which can be defined, which in turn make feedback more effective. The teacher's attempt to assess learners' understanding may refer to the capacity to use explanatory concepts creatively, or the capacity to think logically or to tackle new problems or the ability to re-interpret objective knowledge. What this means in practice is that the teacher has to anticipate what type of learning should occur and then write and structure the required achievements in the form of statements (outcomes). These outcomes provide an opportunity to the teacher to reconsider whether the outcomes are appropriate, that is, whether they suit the particular content and concepts.

Using the outcomes to set assessment criteria, gives all learners equal opportunities to demonstrate how well they have achieved the outcomes. Criteria serve to be a well-defined standard according to which a learner's performance can be compared. This means that clear criteria are described and defined to indicate what level of achievement is for instance worth an "A", and what is worth a "B". The focus in this case is on what a learner can in fact do and the skills the learner has mastered.

---

Giving learners an opportunity to ask questions in order to clarify the criteria and to know exactly what is expected of them in the assessment task, will ensure that learners know how to attempt different types of assessment successfully. Comments based on expectancies (assessment criteria) are more constructive in motivating learners. When learners have a good understanding of what it is they are attempting to achieve, the achievement becomes quicker and easier. Understanding and commitment follows when learners are involved in determining goals and identifying criteria for assessing progress. Learners feel more comfortable in the teaching-learning situation if a teacher communicates assessment criteria in terms that they can understand or by providing examples of how the criteria can be met in practice.

## **2. CONCLUDING REMARKS**

Effective feedback has been shown to improve learning where it gives each learner specific guidance on strengths and weaknesses, preferably without any overall marks. Thus, the way in which test results or performance in a task or project are reported back to learners so that they can identify their own strengths and weaknesses, is of crucial importance. Learners must be given the means and opportunities to work with evidence of their difficulties.

Effective feedback is goal-referenced and has a purpose. To talk of feedback, in other words, is to refer to some notable consequence of one's actions, in light of intent. Given a desired outcome, feedback is what tells the teacher if he/she should continue on or change course. If some joke or aspect of the writing isn't working – a revealing, non-judgmental phrase – the teacher needs to know. Goals (and the criteria for them) are often implicit in everyday situations. Alas, goals and criteria which are unstated or unclear lead to needlessly sub-par performance and confusing feedback.

Any useful feedback system involves not only a clear goal, but transparent and tangible results related to the goal. Feedback to learners (and teachers) needs to be concrete and obvious. If your goal as a teacher is to “engage” learners as a teacher, then you must look for the most obvious signs of attention or inattention; if your goal as a learner is to figure out the conditions under which plants best grow, then you must look closely at the results of a controlled experiment. We need to know the tangible consequences of our attempts, in the most concrete detail possible – goal-related facts from which we can learn. Thus, the best feedback is so tangible that anyone who has a goal can learn from it. The more information “fed back” to us, the more we can self-regulate, and self-adjust as needed. That is what the best concrete feedback does: it permits optimal self-regulation in a system with clear goals.

---

*Feedback is actionable information.* Feedback should be data or facts that one can use to improve on your own since you likely missed something in the heat of the moment. No praise, no blame, no value judgment – helpful facts. For instance a teacher should notice that eight learners are off task as he/ she teaches, and take action immediately. Feedback is that concrete, specific, useful and meaningful.

Thus, “good job!” and “You did that wrong” and “13/20” on a paper are not feedback at all. The responses are without any actionable information. What effective coaches also know is that actionable feedback about what went right is as important as feedback about what did not work in complex performance situations. Similarly the teacher is sometimes surprised to learn that what he/she thought was unimportant in his/her presentation was key to audience understanding. That is why feedback can be called a reinforcement system: *I learn by learning to do more of (and understand) what works and less of what does not.*

Feedback should be *user friendly* because it is not of much value if the user cannot understand it or is overwhelmed by it. Highly-technical feedback to a novice will be confusing and hard to decipher. On the other hand, generic vague feedback is a contradiction in terms: the learner needs to perceive the actionable, tangible details of what he/she did.

*Feedback needs to be timely and on-going.* Vital feedback on key performances often comes days, weeks, or even months after the performance, submission of a paper or project. It follows that the more the learner can get timely feedback, the better the ultimate performance will be – especially on complex performance that can never be mastered in a short amount of time and on a few attempts. When the learner fails, immediately to start over – even, just where he/she left off. This additional aspect of user-friendly feedback: it suits the need, pace and ability to process information.

For feedback to be useful it has to be consistent. Clearly, the learner can only adjust successfully if the information fed back to him/her is stable, unvarying in its accuracy, and trustworthy. Teachers and learners need to have a similar understanding of what is quality work and what and how to comment when the work is or is not up to standard. That can only come from teachers constantly looking at a learner’s work together, becoming more consistent over time, and formalizing their judgments in highly-descriptive rubrics supported by exemplars. By extension, if we want learner-to-learner feedback to be more helpful, learners have to be guided in the same way as teachers to be consistent, using the same exemplars and rubrics.

---

### 3. REFERENCES AND READING LIST

Ausubel, D. P. 1968. *Educational psychology: A cognitive view*. New York: Holt, Rinehart & Winston.

Black, P. 2003. The Nature and Values of Formative Assessment for Learning. Paper presented at AERA conference, Chicago, 22 April, Kings College. London. 50 – 60

Black, P. & Harrison, C. 2001. *Feedback in questioning and marking: The science teacher's role in formative assessment school science review*. 82: 301 / 55 – 61

Black, P. & Wiliam, D. 1998. Assessment and Classroom Learning. *Assessment in Education*. March: 7-74.

Booyse, C. 2010. A constructivist approach in instructional design and assessment practice", Unpublished D.Ed Thesis, Unisa.

Boud, D., Cohen, R. & Sampson, J. 1999. Peer learning and assessment. *Assessment and Evaluation in Higher Education* 24(4): 413 – 426.

Borich, G.D. & Tombari, M.L. 2004. *Educational assessment for the elementary and middle school classroom*. New Jersey: Pearson Education Inc.

Forgas, J.P. 1995. Mood and judgment: The Affect Infusion Model (AIM). *Psychological Bulletin*, 117: 39-66.

Jackson, R.R. 2009. *Never work harder than your students & other principles of great teaching*. Alexandria, Virginia USA: ASCD

Kluger, A. N., & DeNisi, A. 1996. The effects of feedback interventions on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, 119(2), 254–284.

Kolb, D.A. 1984. *Experiential Learning: experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall

Lambert, D. & Lines, D. 2000. *Understanding assessment: Purpose, perceptions, practice*. New York: RoutledgeFalmer.

Lazarus, R.S. 1991. *Emotion and adaptation*. New York: Oxford University Press.

Marzano, R.J. 1992. *A Different Kind of Classroom: teaching with dimensions of learning*. Alexandria, VA: Association of Supervision and Curriculum Development

Nitko, A.J. 2004. *Educational Assessment for Learners: 4th ed*. Upper Saddle River, NJ: Pearson/ Merrill/ Prentice Hall.

---

Ritchhart, R. & Perkins, D. 2008. Teaching students to think. Making thinking visible. *Educational Leadership*, 65 (5), pp. 57-61

Walvoord, B.E. 2004. *Assessment clear and simple: A practical guide for institutions, departments, and general education*. San Francisco: Jossey-Bass.

William, D. 2012. Feedback: Part of a system. *Educational Leadership*, 70(1), pp. 30–34.

*BA Ed (cum laude) at UP; BA Hons at UP; B Ed (Hons) (cum laude) at Unisa, M. Ed (cum laude) at PU for CHE; D Ed (Didactics) at Unisa.*

*Current: Manager: Curriculum at Umalusi (Council for Quality Assurance in General and Further Education and Training) responsible for a variety of cross-cutting tasks to ensure standards; development processes of the education and training sectors under the guardianship of Umalusi; the conceptual framing of research initiatives; development of curriculum guidelines in theoretical frameworks; management of comparative research initiatives and international benchmarking, the analysis of assessment items, provision of guidance in curriculum development and evaluation and development of research tools/instruments. External moderator Unisa: Hons courses.*

*Previous: Lecturer at University of the Witwatersrand (Wits): Curriculum Division; ACE Academic co-ordinator, materials developer for teacher training; curriculum development team; inter-institutional work for Unisa.*

*Publications: co-writer of three books on learning programme development and curriculum studies. Articles and conference papers are on instructional design and assessment practices, research findings from curriculum analysis, the application of typologies as teaching strategy and the impact of feedback as a feedforward process.*

*Interests: biofeedback technology, holistic and integrated health practices, growing bonsai and orchids and involvement in NGO (community development) initiatives.*

*I embrace a holistic, neuroscientific view of deepening learning and metacognition in order for a child to make meaning and strong connections. I embrace scaffolded, discovery learning and assessment based on conducive cognitive-motivational-relational configurations and directed to innovation and critical, constructive thinking. A learning environment filled with compassion, motivation and mediation lies close to my heart. (Hand in hand with Carl Rogers, Jerome Bruner, Loris Malaguzzi, Reuven Feuerstein, Lev Vygotsky, Eric Jensen, Daniel Pink and Richard Lazarus).*