Assessment is for Learning: Formative Assessment and Positive Learning Interactions

Ian Clark, M.A.
University of Washington

Florida Journal of Educational Administration & Policy

Fall 2008
Volume 2, Issue 1

Wherever the challenge of promoting effective learning exists in our classrooms there also exists the opportunity for better formative assessment. The time has passed when educational policy makers should support practitioners and embrace the preponderance of relatively recent research which recommends formative assessment interventions in the classroom. One such programme has been gathering increasing momentum in recent years and has become known as Assessment for Learning (AfL). AfL uses formative assessment methods to inform, support and enhance the learning process. The focus of this system is placed on: the quality of learning, the provision of advice and feedback for improvement and a strong emphasis on cooperative learning groups. AfL is founded upon five fundamental principles, all of which revolve around the hub of positive interactions in the classroom: students must a) be able to understand clearly what they are trying to learn, and what is expected of them; b) be given feedback about the quality of their work; c) be given advice about how to go about making improvements; d) be fully involved in deciding what needs to be done next, and e) be aware of who can give them that help.

Keywords: Assessment; Learning; Quality; Efficacy

Assessment for Learning: Formative Assessment and Positive Learning Interactions

'An AfL school is a place where everyone is learning together. It is a place where assessment is part of learning and teaching without dominating them...Assessment for learning is about supporting classroom learning and teaching. It connects assessment and learning/teaching.' (AAG/APMG, 2002 – 2008).

This article engages with two closely related themes: a) the theoretical arguments which justify the implementation of Assessment for Learning (AfL) on a wide scale and b) the results regarding the implementation of AfL in practice. Both aspects of this article are drawn from a wide spectrum of research literature and the continuing experience of Scottish schools in partnership with the British government. There are two distinct phases of the AfL programme in the UK: Firstly, the development phase (2002-2004) of the programme was strategically directed by the Assessment Action Group (AAG) and operationally managed by the AfL Programme Management Group (APMG). Secondly, the implementation phase (2005-present) is currently being overseen by the APMG; the main forum for liaison and cooperation amongst partners and networks with the mission of building informed

communities of practice.

The first section of this article introduces the research of Paul Black and Dylan Wiliam of King's College, London who outline the problem of ineffective learning interactions in classrooms. This will be followed by a brief discussion on the issues surrounding the operationalization of AfL interventions in classrooms before moving on to introduce some of the general findings of the AAG and APMG. The remaining majority of the article concerns itself with a detailed investigation into the wider research on cooperative learning and in-service experiences of the AAG/APMG pertinent to the discussion on the implementation of formative assessment interventions. Finally the closing summary of this article will discuss the insights and findings of the Assessment Reform Group (ARG) at Cambridge University's School of Education.

The 'Black Box'

The crisis of ineffective learning interactions in schools is expressed by Black & Wiliam (1998b, p.1) when they observe, 'in terms of systems engineering, present policies in the U.S. and in many other countries seem to treat the classroom as a black box.' The 'black box' is an object for vital criticism because it functions primarily as a receptive system where, 'certain inputs from the outside - pupils, teachers, other resources, management rules and requirements, parental anxieties, standards, tests with high stakes, and so on - are fed into the box, ' (Black and Wiliam, 1998b, p.1). As proponents of the constructivist classroom they are persuasive in voicing their concerns about such a system which is primarily designed to receive and decode external signals. This, they argue, reduces the opportunity for, and effectiveness of positive interactions inside the classroom. Indeed, policies which address national, state and local targets and the more vigorous and frequent testing of students' performance proliferate the weaknesses of current assessment policies.

Operationalising the Concepts: 'Assessment for Learning' in the Classroom

> *'Would you tell me, please, which way I ought to go from here?''That depends a good deal on where you want to get to.'...(Carroll, 1960, Alice in Wonderland, Ch 6, p.64)*

Far from being a trivialization of the AfL methodology the above quotation expresses the potential of AfL to redirect and reform classroom practice and create large positive increases in the level of student engagement. AfL is by no means a fanciful notion. Indeed, it is currently in the third year of a successful implementation programme in a substantial number of UK schools in the Scottish region. Neither does it seek to provide a rigid prescription for the implementation of formative assessment in classrooms. There are no drills or routines which standardize formative assessment interventions in classrooms because a credible theory of teacher action, which seeks to specify the 'best' course of action given certain conditions is impossible even in principle (Wiliam, 2003). The quality of any AfL programme is largely dependent on the skill and application of the individual teacher in the unique circumstances of her or his classroom. Wiliam *et al* (2004, p.50) remark, 'The

central tenet of the research project was that if the promise of formative assessment was to be realised, traditional research designs—in which teachers are 'told' what to do by researchers—would not be appropriate.' On the other hand, the day-to-day demands placed on teachers are too great for them to operationalise an entirely nebulous vision. Thus, a working balance between the classroom lives of teachers and the principles required to bring AfL into existence must be negotiated by each teacher in the specific circumstances of his or her classroom.

Assessment for Learning in Practice: A Culture of Cooperation

The effect of AfL interventions in the classroom is that students keep learning and remain confident so that they can continue to learn at productive levels with life-long benefits. In other words, students are much less likely to experience downward-spiraling motivation problems and disaffection which leads to unsatisfactory achievement and poor discipline. McCroskey and Richmond (1992, p. 44) remark that (classroom) discipline problems:

> '…are merely symptomatic of the cause and achieving a productive and relatively stress-free learning environment involves more than controlling student misbehavior effectively. All aspects of what happens in the classroom are contingent upon eliciting cooperation from every class member.'

The overwhelming majority of classrooms exhibit a superficial culture of cooperative interaction. However, research undertaken by the AAG (2002 – 2004) and the subsequent in-service experiences reported by the APMG (2005 – 2008) found that the conditions for successful cooperation exist in classrooms as evidenced by the positive responses of students to the idea of co-operating with different people in their assessment. Of particular interest among their findings was confirmation that the students liked to help each other with schoolwork, either while actually working and learning or in terms of assessment. The findings of the AAG & APMG advocate a neo-Vygotskian perspective by building on expert/novice interactions by embracing self-assessment and peer/peer interaction/assessment activities.

It is therefore unsurprising that the central pillar in the AfL framework is effective dialogue among the central participants – the students. Furthermore, AfL necessarily entails cooperation between *all* the participants in the learning process including teachers (and parents). The APMG found that students appreciated in-depth communication with teachers and parents about their progress, and considered it to be a valuable part of the process of learning. It was noted that McCroskey and Richmond (1992, p.44) believe that 'all aspects of what happens in the classroom are contingent upon eliciting cooperation from every class member by employing sound principles of classroom management'. Disciplined and cooperative learning behaviours may be more effectively embedded within the AfL classroom and beyond to the remaining years of their lives through the use of 'cooperative learning groups' (Johnson & Johnson, 1996). Cooperative learning groups are characterized by a) positive interdependence; b) individual accountability; c) face-to-face promotive

interaction and; d) the appropriate use of interpersonal and small-group skills and group processing. Cooperative learning groups act as powerful catalysts for higher achievement, more positive relationships among students, and greater psychological health (Johnson & Johnson, 1996; Fuchs et al, 1994; King, 1990). Such groups may take various forms and can be used strategically to improve learning. 'Think pair share' groups encourage higher order thinking and require that students consider the question independently before discussing their ideas with a partner (AAG/APMG, 2002-2008).

The next phase of group work may then be a 'think pair square'; this is the second and final stage in this example of cooperative group strategy and entails the sharing of ideas between pairs. Cooperative learning interventions create more confident and competent students. Such small group interaction has been clearly connected to specific academic enablers. These include cognitive enablers such as improved problem-solving skills (Radziszewska & Rogoff, 1991; Tudge et al, 1996), and increases in recall and comprehension of material (Azmitia, 1988; King, 1990). Cooperative learning benefits the affective domain by enabling better social communication and negotiation skills (Fuchs et al, 1994; King, 1990) and crucially positive engagement in learning activities (Azmitia, 1988; King, 1990; Radziszewska & Rogoff, 1991). A great deal more discussion will take place on the implications of AfL interventions in the classroom in the latter sections of this article. Before the practical scenarios experienced in the UK are presented the next sections embark on discussion regarding the theoretical foundations and wider contexts of AfL.

Formative Assessment: Recent Research on Assessment for Learning

Educational research regarding 'communication in the classroom' has come a long way since its importance was widely acknowledged at the 1972 International Communication Association (ICA) convention based in Washington D.C, which focused on communication and learning. Some 25 years later the influential researchers Black and Wiliam (1998a, b) were commissioned by The Assessment Reform Group (ARG) at the University of Cambridge (England) to undertake a review of formative assessment. In this review Black & Wiliam (1998b, p.2) defined formative assessment as 'all those activities undertaken by teachers and/or *by their students*, which provide information to be used as feedback to modify the teaching and learning activities [and] when the evidence is actually used to adapt the teaching to meet student needs.'

The necessity for a profound change in classroom culture has been expressed by Michel Fullan; the world renowned educational innovator and former Dean at the OISE in Ontario, Canada. Fullan remarks:

> 'It has become increasingly clear from various sources that we need professional learning communities in which teachers and leaders work together and focus on student learning. But they must be infused with high-quality curriculum materials and assessment information about student learning,' (Sparks, 2003).

It is upon the need for the infusion of assessment information which AfL concentrates. Although the fulcrum of Black and Wiliam's research is formative assessment it is classroom interaction and communication that exist at its centre. Practitioners who advocate AfL seek to go beyond a merely passive congregation of students (i.e. the notion of the pejorative 'black box') by encouraging co-operative and collaborative interactions in the classroom. However, at present pupils are often seen working in groups but not working *as* groups (Black, 2007). In this reality, standards can be raised only if policy makers realize that teachers require direct help with the challenging task of establishing a culture of cooperative learning in their classrooms. Black and Wiliam's research about formative assessment made it clear that the foundation for improvements in classroom practice reside in a policy which recognizes the communicative triptych of a) involvement, b) discussion and c) feedback. Rick Stiggins, the director of the Assessment Training Institute (ATI) in Portland, Oregon advances the proposition that:

> 'Two things are important here. The first is that we must clearly articulate the achievement targets we want students to hit. If there's knowledge to be mastered, what knowledge? What are the reasoning proficiencies, performance skills, or product development capabilities we want?' (Sparks, 1999)

The ARG pamphlet avers that the consequence of this kind of interactive process is a large positive increase in the level of student engagement with the learning process (ARG, 1999). The clear articulation of achievement targets relies on constructive feedback from self, peers, teaching staff, and parents regarding the quality of work produced. Feedback about the quality of the work produced is a clear priority in the AfL system, while the traditionally scrutinized aspects of student output of quantity and presentation have relatively little significance (ARG, 1999). However, despite the now widening global awareness regarding the desirability of AfL interventions one review of assessment practices in U.S. schools remarked, 'the assessment practices outlined above are not common, even though these kinds of approaches are now widely promoted in the professional literature' (Neill, 1997, pp.35-6). It is perhaps due to this general lack of implementation that AfL is perceived by many as a new art or theory of classroom practice. However, it is not a radical innovation, indeed it draws on ideas that have been around since the early writings of the American educational philosopher John Dewey (1859 – 1952) and those of the Russian developmental psychologist Lev S Vygotsky (1896 – 1934). It is worth remembering that although Vygotsky's most productive years at Moscow's Institute of Psychology were between 1924-1934 the most often cited text on his theories, '*Mind and Society*' became accessible to the mass international readership as late as 1978. Furthermore, As Black & Wiliam (2005) observe, the effective integration of formative and summative assessment will require a different change-management strategy depending on national circumstances, and in some cases may be very challenging indeed.

Classroom Interaction as the Foundation of Assessment for Learning

Askew (2000, p. 47) observes that:

> 'the characteristics of dialogue are equality, sharing, spontaneity, collaboration and reciprocity. What I found interesting is that young people do not think such experiences are appropriate for the classroom where a particular view of behaviour is perceived.'

In something of a stark contrast to existing classroom practice AfL is founded upon five key principles of assessment in action, all of which focus on communicative interaction: students must a) be able to understand clearly what they are trying to learn, and what is expected of them; b) be given feedback about the quality of their work and what they can do to make it better; c) be given advice about how to go about making improvements; d) be fully involved in deciding what needs to be done next, and e) be aware of who can give them help if they need it. It breathes a new vitality into the seemingly stagnant concept of 'student centered learning' by re-positioning the students (the most important and most vulnerable stakeholders in the process of learning) at the very centre of assessment and learning interactions. As Askew's (2000) observation seen at the beginning of this section suggests, the quality of communication in schools is a matter for grave consideration. This sentiment is shared by many, including Brookes and Brookes (1993, p.108) who, when making the case for constructivist classrooms, remark 'dialogue is not a tile in the mosaic of school experienced by most students.'

Barriers to Implementation: Educational Policy and Practice

If student achievement is to be maximised policy-makers and teachers must pay greater attention to the modernisation of formative assessment through improvements in the quality of classroom interactions. The current policies and practices which govern assessment place a counter-productive distance between the teacher and the student and make no direct attempt at redressing this crisis in our classrooms. It is concerning that we persist in the assessment procedures of an era now long passed. Rick Stiggins (2004, p.22) observes:

> '… in districts, schools, and classrooms across the nation [USA], educators still assess student learning the way their predecessors did 60 years ago because they have not been given the opportunity to learn about…new insights and practices.'

Consequently, assessment has yet to be seen as a direct and powerful driver of school improvement. Observers of the 'post-modern era' such as Ulrich Beck (Professor of Sociology at the University of Munich) remark that conventional social institutions now create more problems than they solve. The crisis is largely attributable to policies which advocate the energetic use of methods which do not and which have never adequately met social needs (Beck, 1999). Admittedly, it is difficult to forge a new system within 'post-modern' societies which are typified by cultural fragmentation, states of flux and rapid and

turbulent change. Yet, these *are* the challenges we face in our societies and therefore in our schools. If we cannot begin to resolve them, then those we teach will be ill-equipped to deal with the challenges facing mankind. The solution to an increasing inability to negotiate social meaning begins with 'equality, sharing, spontaneity, collaboration and reciprocity' (Askew, 2000) in our classrooms. Educational policy regarding assessment will not change unless driven by the meaningful revision of the political and professional discourse regarding classroom interactions. The expressive power of the grammatical preposition is without equal in pedagogical discourse. When we talk of doing things *with* the student rather than *to* the student; when feminists write about research which exists *for* women rather than *about* women, intentions are being expressed most clearly. In the case of assessment we must supplant the word *of* in that traditionally used phrase *assessment of learning* with the word *for* - a simple amendment which represents a fundamental and essential shift in policy and resource allocation. These are small utterances which represent a highly significant change in the perception of classroom interaction.

The crisis of student disaffection is exacerbated by current assessment policy and it is impairing huge numbers of students. Unfortunately, neither practitioners nor policy makers are reacting to this in sufficient numbers. Tests are usually viewed summatively by teachers, and their formative potential is largely overlooked (Morris et al, 1999). Consequently, the enduring preoccupation with performance related goals (i.e. grades) continues to dominate the agenda and intimidate the student. To focus our learning systems on ever more effective, valid and reliable methods of gathering assessment data is of course important. Yet when teachers and policy makers focus upon these activities it serves to reinforce the undesirable dominance of our current assessment systems. There exists an enduring misconception that the course to school improvement is better navigated by using more frequent and more intense standardized testing. A very serious consequence of the ever more robust application of traditional assessment systems is the creation of large numbers of disaffected students, particularly among lower achieving students (Harlen & Deakin Crick, 2003). This negative impact of current policy has been well documented. Both Cambridge University's Assessment Reform Group (ARG, 1999) and the University of London's EPPI-Centre (2002) recognize that students are intimidated by traditional high-stakes tests, show high levels of test anxiety and much prefer other forms of assessment. Ames and Ames (1990) presented a comparison of two high school Mathematics teachers who took very different approaches to testing.

Although this study did not take place in an AfL school it illustrates the value of AfL clearly: One teacher graded every homework assignment and counted homework as 30% of a student's final grade. The second teacher told students to 'traffic-light' the questions according to their ability to do them and spend a fixed amount of time on their homework (thirty minutes a night). They were asked to bring the questions to class the next day for assistance on those questions they flagged as orange (unsure) or red (unable to attempt). This teacher avoided using numerical grades preferring instead to use short descriptors regarding the quality of the homework. In addition the students were given the opportunity to redo their assignments, and homework was counted as only 10% of the course grade. Consequently, the teacher was more successful in motivating students to turn in their homework. In the first class, some students exhibited self-defeating behaviours rather than

risk low evaluations of their earnest efforts to succeed. In contrast the students in the second class were not risking their self-worth each time they did their homework but rather were attempting to learn in a supportive environment where mistakes were viewed as acceptable and used to inform the next steps in the learning process. Not only does the existence of high-stakes testing create disaffection on a wide-scale, it perpetuates its own political existence – a phenomenon noted by Wiliam et al (2004, p. 49) when they write:

> '…the introduction of high-stakes state-mandated testing, such as now exists in England and most states in the U.S.A, makes the effective implementation of formative assessment even more difficult. This is because…attempts to maximise student and school scores appear to result in a lack of attention to the kinds of higher-order thinking involved in formative assessment.'

High-stakes testing creates disaffected students, and disaffected students don't achieve their full potential. This is a reproductive phenomena and those students who exhibit disaffection often experience an ever-deepening spiral of self-defeating learning behaviours and motivational problems (Covington, 1984). AfL interventions provide relatively new solutions to the issue of student disaffection. Therefore, it is essential that much of the energy and many of the resources devoted to traditional assessment procedures should be diverted to AfL. So many resources are deployed to the prevailing policy - assessment *of* learning - that there are no resources left to train teachers on how to undertake formative assessment interventions (Stiggins, 2004). Stiggins, in an interview with the US National Staff Development Council observes:

> 'The key is to understand the relationship between assessment and student motivation. In the past, we built assessment systems to help us dole out rewards and punishment. And while that can work sometimes, it causes a lot of students to see themselves as failures. If that goes on long enough, they lose confidence and stop trying,' (Sparks, 1999).

District and school unit administrators have not been encouraged to build assessment systems that balance standardized tests and classroom assessments in the correct proportions. As a direct result of these endemic and enduring problems of policy, classroom assessment systems remain infused with a robust energy. This remains so although the political machinery which facilitates the flow of the inputs of 'pupils, teachers, other resources, management rules and requirements, parental anxieties, standards, tests with high stakes...' (Black and Wiliam, 1998b, p.1) into the 'black box' is proving resource inefficient (Black and Wiliam, 1998a-b; ARG, 1999). When one considers the costly weaknesses of current assessment policies and practices it is astonishing that they have been imbued with an increasing vitality over the past few decades. Grades remain the most accepted and valued definitions of academic success and government inspections and competitive league tables guarantee the continuing emphasis on test-pass rates and grades. The grasp of the traditional system upon our students is tightened by those policy makers who attach the promise of extrinsic rewards for schools that produce high scores and sanctions for schools that do not

perform adequately. Why aren't practitioners and policy makers profoundly shocked and embarrassed that extrinsic motivators and performance goal orientations pervade our education systems at every level? A significant part of the answer to this question resides in the psyche of those who determine educational policy. Those that have the greatest responsibility to implement change believe success is achieved on a personal level when one is confronted with a tougher challenge. It is unfortunate that to hold such a view supports the ill-conceived practice of improving schools by confronting them with an increasing number of challenges of deepening difficulty. A young person's confidence should be carefully nurtured and most certainly not brushed aside in a flurry of testing which causes disaffection and social immaturity.

The use of extrinsic rewards (and punishments) by policy makers runs to the very root of the problem in our classrooms and reinforces it daily. Some may expect teachers to at least mitigate or even simply ignore these externalities and raise standards anyway by virtue of their own efforts. Black and Wiliam (1998b, p. 3) reject this as an unrealistic expectation when they state, 'it seems strange, even unfair, to leave the most difficult piece of the standards-raising puzzle entirely to teachers. If there are ways in which policy makers and others can give direct help and support to the everyday classroom task of achieving better learning, then surely these ways ought to be pursued vigorously.' In the AfL classroom the teacher has a specific role which may be seen as analogous to the gears of an organic process. In the AfL classroom the teacher attempts to reconcile the cognitive demands of the lesson and the cognitive levels of the learners so that they move forward as a community without being discouraged by work that is simply too challenging.

Assessment for Learning: A Constructivist Intervention

In stark contrast to the traditional policy and of central importance here is the explicit intention of AfL to motivate and engage the student. Policy makers have not explicitly promoted the practice of a cooperative classroom culture, instead leaving that task to the teachers. However, as Black and Wiliam have already noted this in not a realistic situation and political support as provided by the APMG in the UK is required if the situation is to improve. The confidence to learn varies among individual students due to an array of complex social issues (e.g. gender, race, domestic circumstances, social status etc). Further, a confident motivation to learn is also dependent upon the individual and collaborative processes of cognitive internalization.

Within the purview of Vygotskian theory, classroom internalization is largely dependent on social construction. From Vygotsky comes the insight that only a small proportion of a child's cognitive development is self-constructed. By far the larger proportion is done by internalizing a successful performance seen in another person in their social environment and/or by working collaboratively with their peers in the construction of more powerful strategies. In this 'constructivist view' of learning, as opposed to the increasingly problematic 'reception view', the teacher provides meaningful and appropriate guidance and extension to the learners' experience. Appropriate guidance means that teachers should not a) support the student in activities in which s/he is already capable and b) focus on supporting the learners attempts to make sense of their experiences and enable them to cross

the 'zone of proximal development' – a spectrum of achievement only available with support (Vygotsky, 1978).

Does Traditional Testing Frustrate Learning?

Traditional assessment methods are limited measures of student learning and of limited value for guiding student learning. These methods are often inconsistent with the increasing emphasis being placed on the necessity for students to think analytically; to understand and communicate at the detailed and overview levels; and to acquire life-long skills that permit continuous adaptation to their environment. According to the AfL interpretation of classroom culture assessment must be a mechanism for providing instructors with data for improving their teaching methods and for guiding and motivating students to be actively involved in their own learning; assessments should help students 'become more effective, self-assessing, self-directed learners,' (Angelo & Cross, 1993, p.4). Any system of learning is an impossibility without a 3-cornered model: 1) curriculum 2) teaching and learning (instruction) 3) assessment. The practices of AfL develop this fundamental framework by putting the student at the *centre* of this learning model and connecting the student with each corner. By situating the student at the centre of everything we currently understand to be good and true about pedagogy we can more actively determine what students learn, and how well they learn it.

The first thing we might usually decide is what we want our students to take away from a particular course. However in AfL it is not only the instruction and assessment of the individual subjects to be taught and tested that are of interest as they are in most existing classrooms. The purview of AfL is significantly larger and seeks to address the entire experience in the following way: students should be able to understand and communicate those aspects of curriculum, instruction and assessment that can improve their learning both in detail and in overview. Only after this has been achieved can students successfully engage with the subject matter taught and tested in the specific disciplines of the Arts and Sciences. To achieve this practitioners and policy makers should choose classroom assessment techniques appropriately (Bloom et al, 1994; National Research Council, 1996; Wiggins, 1998) and design tests that encourage the kind of learning we want students to achieve (McKeachie, 1986). The choice must be made between assessment techniques which drive student learning and have the potential to meaningfully engage the student with the meta-process of learning and those that daunt the student with ever more intense and frequent testing of performance outcomes. The latter choice is an unthinkably damaging construction in the AfL classroom.

Many students will learn whatever is necessary to get the grades they desire. If tests are based on memorizing details, students will usually attempt to deploy a learning strategy that focuses on the retention of facts. Alternatively if assessments stress the synthesis and evaluation of information, students will be motivated to practice those skills when they study. Using the often deployed multiple-choice test seen in Mathematics testing as an example: If we wish the students to be able to recite facts and to solve simple algorithmic problems, then that assessment technique is well aligned with the stated goals. However, if our goals are an understanding of the scientific process; a lifelong interest in the subject; the

ability to intellectually analyze the media noise regarding science, then this assessment technique will not provide useful feedback about the attainment of these goals. The subject to be taught will determine the precise nature of the assessment, but an effective assessment intervention will always 'define what specific patterns of thinking we want students to demonstrate,' (Sparks, 1999) and in doing so assessment and instruction (teaching and learning) are unified. This approach to assessment is fundamental to the AfL programme in Scottish schools, and it is exactly what the AAG/APMG refer to when they say, 'assessment for learning...connects assessment and learning/teaching,' (AAG/APMG, 2002 – 2008). The concept of student involvement in the evaluation of their own learning process requires a radical departure from the systemically reproduced prejudices concerning the current role of the student – that of a subject as in the 'reception view' rather than the central participant as in the 'neo-Vygotskian' perspective.

Implementing the Policy in the Classroom

The forthcoming sections will focus on a discussion about the implementation of the AfL programme in the UK context, with reference to the relevant research literature as necessary. A detailed policy publication (June 2005) by the Scottish Education Department's Qualifications, Assessment and Curriculum Division may be found at: www.scotland.gov.uk/Publications/2005/06/2393450/34518

The Classroom Environment

The AAG/APMG programme recognizes that the successful creation of a classroom environment in which AfL may thrive, policy makers need to support the training of practitioners in a number of key areas. Firstly, teachers should articulate *to their students* the achievement targets that they are *realistically* expected to achieve. Realistic in this context means that standards are high enough to motivate students to do their best work but not so high that students will become disaffected in trying to meet those expectations. To develop the drive to achieve, students need to believe that achievement is possible which means that early opportunities for success should be provided (American Psychological Association, 1992; Bligh, 1971; Forsyth and McMillan, 1991; Lowman, 1984). In AfL students are informed of the learning goals in terms that they understand from the very beginning of the teaching and learning process. It is unrealistic to expect them to simply know how success may be achieved and to refuse to forearm students of any age with data that helps to show them how to meta-analyse their own learning is a disservice to everyone who wants that individual to learn.

Independent learning takes place in conditions where the students know not only the purpose of each activity but also the assessment criteria, in advance. Confident and independent learning can be promoted by discussing learning strategies and distributing prepared checklists which clearly illustrate what success looks like. Students are then more able to self and peer-assess and can remind themselves of the success criteria by simply referring to the checklists prepared to support their learning (AAG/APMG, 2002- 2008). When they are clear on this crucial matter, children achieve more, through paying attention

to the key performance standards required for academic success. The objective is to create a cooperative environment that is student lead rather than one which requires micro-managing because the students exhibit an unwillingness to learn or claim forgetfulness of their learning activities. The AAG/APMG found that students taught in this way were more criteria aware and focused on success.

In addition motivation and engagement improved as they felt that they were able to achieve the realistic targets. Teachers should create a productive and supportive learning environment both implicitly by using the checklists and explicitly by using appropriate discourse in the classroom (Tiberius, 1990). Students can develop a deeper understanding of their learning when they are given opportunities to discuss the learning process with their teacher and their peers (AAG/APMG, 2002-2008). In a co-operative classroom it is important that the teacher consciously avoids messages that reinforce positional power or those that emphasize extrinsic rewards and sanctions. Instead of using questioning techniques which demand obedience, such as 'I require', 'you must', or 'you should', more open discourse such as 'I think you will find…'or 'I will be interested in your reaction to,' are more applicable (Johnson & Johnson, 1996; Lowman, 1990). More open-questioning techniques may be adopted that help students to explore the parameters of their own understanding. If such questions are put to a whole class group coupled with a no-hands up policy the increased scope afforded to the students requires that they are given a substantive amount of time to answer. A longer wait time than the usual 3-4 seconds before eliciting a response promotes deeper thinking and learning. It should be clear that AfL lessons play down the teacher-fronted classroom and are less didactic. Consequently the students are the central participants in the co-construction of the learning process. Students may be encouraged to engage with an activity by writing the issue on the board as a question and then using cooperative learning groups to discuss how the answer may be found (AAG/APMG, 2002-2008). Questions are put to the whole class and then students chosen. The APMG notes that the choosing of students encourages wider participation in the lesson and that teachers receive a good response when they make it clear that all kinds of responses are valued as contributions to the learning community.

Self Assessment

Classroom assessments should be devised in a way which builds confidence in the students as learners and helps them take responsibility for their own learning. To do so is to lay the foundation for lifelong learning. Students can assess their own understanding of the subject matter in a variety of ways. For example, 'traffic-lighting' is often used in AfL classrooms, and can be simplified to suit any situation. In one APMG partner school a teacher asked the class to annotate their work with ticks/check-marks (can do easily), question marks (not sure), and crosses (cannot do). Other practitioners involved in the AAG/APMG project use diaries in which the students self-assess their strengths and weaknesses. This places unique demands on the student and requires that they are shown how to use this new self-assessment tool effectively. Once the students understand how to work the machinery of self-assessment for themselves the partner schools report that it takes 3-4 minutes for them to complete the entry. The teacher collects the dairies and spends 10-15

minutes looking at their output while the students interact in cooperative work groups. Finally, the teacher circulates around a half or a third of the class discussing the issues raised in the diaries. While this appears to slow the pace of learning it does exhibit the significant advantage of engaging the quieter pupils who benefit from this interaction.

AAG/AMPG research has reported that students in the AfL programme express clear ambitions to do well and hope for general advice that consolidates their objectives. In other words, students demonstrate a focus on their continued improvement across time and not just on their grade on a particular test or assignment. It is precisely this appreciation of the larger picture and attention to long-term learning that AfL interventions seek to support.

Feedback

A fundamental aspect of AfL is discussion with their teacher regarding their achievements and improvements. Substantial time should be spent at the beginning of the lesson on forward planning and at the end of lessons on reflection. We have already noted the profound benefits associated with meta-cognition; consequently a key feature of any AfL lesson is the thoughtfulness of the students when asked *how* they may learn the subject matter more effectively. A class of 13 year old French language learners were asked how they learn new vocabulary and provided answers such as word association, family testing, testing their friends using SMS text messaging or email and so on (APMG, 2005-2008). AfL is effective in improving the students capacity to self and peer assess across the board.

For example, in activities which encompass the performance of research and delivering multi-media presentations: students are asked to undertake a variety of insightful tasks. Initially they are asked to prepare and deliver a group presentation, but this is only the beginning of the learning process. They are also expected to assess the quality of their own presentation; report on their assessment of their presentation to the class; and receive the assessments of the other groups in the class regarding their presentation. The process is concluded by a teacher directed general discussion on the issues arising from the group and class feedback (APMG, 2005 – 2008). Managing feedback appropriately is a fundamental determiner of the classroom atmosphere.

Comments only marking replaces numerical grades as the method of written feedback between teacher and student (AAG/APMG, 2002-2008). Some partner schools report initial resistance to the concealment of grades to the APMG, but once the pupils understand that their grades will be revealed to them at some future time they accept this aspect of the AfL system. Grades are temporarily withheld to encourage students to independently critique their own work and to honestly analyze their strengths, and work on their weaknesses (Forsyth and McMillan, 1991). It is the time taken by the teacher to explain these issues to the students and to establish a culture of cooperation and understanding that makes AfL such a powerfully engaging system of instruction.

The students who are currently participating in the AAG/APMG project report their surprise at seeing how often they made the same mistakes. The error patterns are made clear to them by the use of self-assessment sheets and by an additional sheet detailing common mistakes, which they discuss with their peers. The use of such sheets enables the students to analyse their own work, discover error patterns and communicate their feelings and thoughts

to others about their own work and the work of others (AAG/APMG, 2002-2008).

The Assessment Reform Group (ARG): Final Insights

In *Assessment for Learning: Beyond the Black Box* (1999) written by the Assessment Reform Group (ARG) various undesirable tendencies exhibited by classroom practitioners were identified. These may be summarized in closing as: a) a tendency for teachers to assess quantity of work and presentation rather than the quality of learning; b) a focus on marking and grading at the expense of providing advice for improvement, which tends to lower the self esteem of pupils; c) a strong emphasis on comparing pupils with each other which demoralizes the less successful learners; d) teachers' feedback to pupils often attempts to serve managerial and social purposes rather than helping them to learn more effectively. The ARG propose that improving learning through assessment depends on five key factors: i) a recognition of the profound influence instruction and specifically assessment has on the motivation and self esteem of pupils; ii) adjusting teaching to take account of the results of assessment; iv) the provision of effective feedback to pupils; iii) the active involvement of pupils in their own learning; v) the need for pupils to be able to assess themselves and understand how to improve. Particular emphasis was placed upon the sharing of learning goals with pupils, involving pupils in self assessment, providing feedback which leads to pupils recognizing their next steps and how to take them.

All these aspects of effective formative assessment interventions may only arise successfully from a classroom culture which uses cooperative learning as its fundamental basis. AfL exists only superficially in the vast majority of participating classrooms, but where it takes place in a meaningful way the benefits extend beyond the classroom, into our communities and far into the future for many of those young learners who participate in this programme of learning. Unfortunately, the 'students' of AfL who exhibit the least aptitude are those we have referred to throughout the article as 'policy makers.' It is clear that it is they who have much to learn before the recommendations of the ARG are recognized as essential policy requirements.

References

American Psychological Association. (1992). *Learner-centered psychological principles: Guidelines for school redesign and reform.* Washington, D.C: American Psychological Association.

Ames, R. and Ames, C. (1990). Motivation and effective teaching. In B. F. Jones and L. Idol (eds.), *Dimensions of thinking and cognitive instruction.* Hillsdale, N. J: ErIbaum.

Angelo, T. A. & Cross, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers.* San Francisco: Jossey-Bass.

Askew, S. (2000). *Feedback for learning*. London: Routledge/Falmer.

Assessment Action Group (AAG)/ AiFL Programme Management Group (APMG). (2002 – 2008). *AifL - Assessment is for learning*. Retrieved on February 8, 2008 from: http://www.ltscotland.org.uk/assess

Assessment Reform Group. (1999). *Assessment for learning: Beyond the black box*. Cambridge,

University: Cambridge School of Education.
Azmitia, M. (1988). Peer interaction and problem solving: When are two heads better than one? *Child Development*, 59: 87-96.
Beck, U. (1999). *World risk society*. Cambridge: Polity.
Black, P. (2007). Full marks for feedback. In: Making the grade. *Journal of the Institute of Educational Assessors*. Spring, 2007, pp. 18-21.
Black, P. & Wiliam, D. (1998a). Assessment and classroom learning. *Assessment in Education: Principles, Policy, and Practice*. 5(1): 7-74.
Black, P. & Wiliam, D. (1998b). *Inside the black box: Raising standards through classroom assessment*. London: School of Education King's College.
Black, P. & Wiliam, D. (2005). Lessons from around the world: how policies, politics and cultures constrain and afford assessment practices. *The Curriculum Journal*, 16(2), 249-261.
Bligh, D. A. (1971). *What's the use of lecturing?* Devon, England, Teaching Services Centre: University of Exeter.
Bloom, B. S. (1994). *Taxonomy of educational objectives, the classification of educational goals, handbook I: Cognitive domain.* In L. W. Anderson & L. A. Sosniak (Eds.), *Bloom's taxonomy: A forty-year retrospective.* Chicago: University of Chicago Press.
Brookes, J. G. and Brookes, M. G. (1993). *In search of understanding: The case for constructivist classrooms*. Alexandra VA: The Association for Supervision and Curriculum Development.
Covington, M. (1984). The self-worth theory of motivation: Findings and implications. *Elementary School Journal*, 85(1): 5-20.
EPPI-Centre. (2002). *A systematic review of the impact of summative assessment and tests on students' motivation for learning*. Social Sciences Research Unit, Institute of Education, University of London. Retrieved on August 25, 2005 from: http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=108
Forsyth, D. R. and McMillan J. H. (1991). Practical proposals for motivating students. In R. J. Menges and M. D. Svinicki (Eds.). *College teaching: From theory to practice.* New Directions in Teaching and Learning, No. 45. San Francisco: Jossey-Bass.
Fuchs, L. S., Fuchs, D., Bentz, J., Phillips, N. B., & Hamlett, C. L. (1994). The nature of student interactions during peer tutoring with and without prior training and experience. *American Educational Research Journal*, 31: 75-103.
Harlen, W. & Deakin Crick, R. (2003). Testing and motivation for learning. *Assessment in Education*. 10(2), 169-207.
Johnson, D. W. & Johnson, R. T. (1996). The role of cooperative learning in assessing and communicating student learning. In T. R. Gusky (Ed.) *1996 ASCD yearbook: Communicating student learning.* Alexandria, VA: Association for Supervision and Curriculum Development.
King, A. (1990). Enhancing peer interaction and learning in the classroom through reciprocal questioning. *American Educational Research Journal*, 27: 664-687.
Lowman, J. (1984). *Mastering the techniques of teaching*. San Francisco: Jossey-Bass.
Lowman, J. (1990). Promoting motivation and learning. *College Teaching,* 38(4): 136-39.

McCroskey, C. and Richmond, V. (1992). *Communication, control, and concern*. Lawrence Erlbaum Associates: Hillsdale, NJ.

McKeachie, W. J. (1986). *Teaching tips.* (8th Ed.) Lexington, Mass: Heath.

McMillan, J. H. and Forsyth, D. R. (1991). What theories of motivation say about why learners learn. In R. J. Menges and M. D. Svinicki (Eds.). *College teaching: From theory to practice.* New Directions for Teaching and Learning, No. 45. San Francisco: Jossey-Bass.

Morris, P. (1999). *The project on feedback and assessment: Final report.* Hong Kong: Hong Kong University.

National Research Council. (1996). *National science education standards.* Washington, DC: National Academy Press.

Neill, D. (1997). Transforming student assessment. *Phi Delta Kappan*, 78: 35-36.

Radziszewska, B. and Rogoff, B. (1991). Children's guided participation in planning imaginary errands with skilled adult or peer partners. *Developmental Psychology*, 27: 381-389.

Sparks, D. (1999). The singular power of one goal. *Journal of Staff Development*, 20(1). National Staff Development Council. Retrieved on September 20, 2006 from: http://www.nsdc.org/library/publications/jsd/stiggins202.cfm

Sparks, D. (2003). Change agent. *Journal of Staff Development*, 24(1). National Staff Development Council. Retrieved on September 20, 2006 from: http://www.nsdc.org/library/publications/jsd/fullan241.cfm

Stiggins, R. J. (2004). New assessment beliefs for a new school mission. *Phi Delta Kappan*, September, pp.22-27.

Tiberius, R. G. (1990). *Small group teaching: A trouble-shooting guide.* Toronto: Ontario Institute for Studies in Education Press.

Tudge, J. R. H., Winterhoff, P. A., & Hogan, D. M. (1996). The cognitive consequences of collaborative problem solving with and without feedback. *Child Development*, 67: 2892-2909.

Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Wiggins, G. P. (1998). *Educative assessment: Designing assessments to inform and improve student performance.* San Francisco: Jossey Bass.

Wiliam, D. (2003). The impact of educational research on mathematics education. In A. Bishop, M. A. Clements, C. Keitel, J. Kilpatrick, & F. K. S. Leung (Eds.). *Second international handbook of mathematics education*. Dordrecht, Netherlands: Kluwer Academic Publishers.

Wiliam, D., Lee, C., Harrison, C., and Black, P. (2004). Teachers developing assessment for learning: Impact on student learning. *Assessment in Education*, 11(1): 49-65.