Introduction

Although many educators focus on summative tests of assessment, many teachers realise the value of diagnostic and formative assessment. Black and Wiliam (1998) define assessment broadly "to include all activities that teachers and students undertake to get information that can be used diagnostically to alter teaching and learning" (p.139).

According to Boston (2002) assessment encompasses teacher observation, classroom discussion, and analysis of student work, including homework and tests. Assessment become formative when information is used to adapt teaching and learning to meet student needs.

It can be argued that formative assessment is valuable for both teachers and students. Formative assessment provides information to teachers about how students are progressing and they can use this information to make the necessary instructural adjustments to their teaching. Students can also gain from feedback obtained from formative assessment because it can help them realise where there are gaps in their desired goals and in their current knowledge and skills.

Benefits of formative assessment

From a pedagogical point of view, it is difficult to disagree with many of the claims made about formative assessment:

- Formative assessment helps with planning because it involves giving clear learning intentions to the students.
- Formative assessment ensures that pupils are focused on the purpose of the task and that they can become involved in their learning and can comment on it - that is there is a sharing of learning intentions.
- Formative assessment empowers the student to realise his or her own learning needs and to have control over future targets. Students are trained to evaluate their own achievements against the learning intentions in oral or written form.
- Formative assessment tracks progress diagnostically and informs a student of his or her successes and weaknesses.
- Formative assessment ensures student motivation and involvement in progress - it raises achievement, it keeps teachers informed of individual needs.

Black and Wiliam (1998) conducted an extensive research study involving over 250 studies to ascertain whether or not formative assessment could be shown to raise levels of attainment in the classroom. Although a large number of studies were selected initially by Black and Wiliam, they rejected many through lack of rigour and decided to take account of only those where a control group had been set up.
They concluded that efforts to strengthen formative assessment produce significant learning gains as measured by comparing the average improvement in the test scores of the students involved in the innovation with a range of scores found for typical groups of students on the same tests. Effect sizes range between 4. and 7. with formative assessment apparently helping low-achieving students, including students with learning disabilities, even more than it helped other students.

Clarke (2001) notes that the findings of student achievement derived from Black and Wiliam's (1998) research really revolve around some key factors:

- the provision of effective feedback to pupils,
- the active involvement of pupils in their own learning,
- adjusting teaching to take account of the result of assessment,
- a recognition of the profound influence assessment has on the motivation and self esteem of students,
- the need for students to be able to assess themselves and to understand how to improve.

Clarke (2001) also noticed that Black and Wiliam identified some inhibiting factors which effect the use of formative assessment and these include:

- a tendency for teachers to assess quality of work and presentation rather than the quality of learning,
- giving greater attention to marking and grading rather than providing advice for improvement,
- having a strong emphasis on comparing students with each other which demoralises the less successful learners,
- teachers feedback to students is often done to serve managerial and social purposes rather than allowing them to learn more effectively.

It is evident from other research studies that the feedback element of formative assessment helps learners become more aware of gaps that exist between their desired goal and their current knowledge, understanding or skills (Ramaprasad, 1983, Sadler, 1989). Bangert-Drowns, Kulick and Morgan (1991) and Elawar and Corno (1985) noted that the most helpful type of feedback on tests and home work provided specific comments about errors and specific suggestions for improvement. As noted by Boston (2002) formative assessment helps support the expectation that all students can learn to achieve high levels and thereby counteracting the cycle in which students attribute poor performance to lack of ability and therefore become discouraged and unwilling to invest in further learning. Frederikson and White (1997) concluded from their research studies that students who understand the learning objectives and assessment criteria and have opportunities to reflect on their work, show greater improvement than those who do not. Mc Curdy and Shapiro (1992) noted that students with learning disabilities, who are taught to use self-monitoring strategies related to their understanding of reading and writing tasks also demonstrated gains in performance.

Shavelson et al (2005) examined the effects of embedded assessments with 12 classes over one school year. They concluded that formative assessment indeed provide major changes in student achievement but the challenge was for teachers to change their beliefs about the nature of student learning and their own teaching to bring about the kind of inquiry teaching that was required.

Feedback and feedforward in formative assessment

Feedback is an important function of education, because it ensures a good evolution in the learning process. It is necessary for students to receive information about their progress and results (Mohr, 1994). Good formative assessment practice needs to be involved in the educational process for both
"feedback" and "feedforward" so that students and teachers have an opportunity for more indepth and qualitative learning (Torrance, 1993). Feedforward means that teacher should involve the students in all steps of their learning and teaching. Vygotski (1979) thought that feedback was not identified only with what the student learned, but also, with what he or she was able to reach in the learning process with the teacher's supports. This meant that feedback allowed a more dynamic planning in the learning and teaching processes (Wood, 1987). The mechanism of feedback in formative assessment knowledge sustains both co-operative learning and teaching processes.

Feedback is information about the gap between the actual level parameter and reference level parameter which is used to alter the gap in some way (Ramapradas, 1983, p. 4). Crucial points necessary for good feedback are: the existence of data and the reference level of the above mentioned parameters, and also equally important is the mechanism for comparing the two general gap parameters between the two levels. There can not be any feedback if any of the three crucial parameters is absent. The mechanism is for comparing the data to generate information about the gap. Feedback can only be labelled if and when the information is used to alter the gap. This is referred to positive feedback according to Ramaprasad (1983). How the educational function is best fulfilled depends on the learning material, the learners, the learning situation, and from good teacher practice. Feedback is considered good when it is used for "self-instruction" which is a very important characteristic according Mohr (1994). Good feedback is, when a student is given the opportunity to help their own learning process through self-control (Mohr, 1994).

The use of formative assessment in Hong Kong schools

In 1998 the Curriculum Development Council in Hong Kong published a report entitled "Learning to Learn" which set out the general directions for curriculum in Hong Kong for the next 10 years. The report recommended that there should be a major change in how teachers identified and diagnosed student learning problems and that they should encourage students to learn how to improve their learning. The policy documents required teachers to carry out formative assessment informally with the classroom learning and teaching throughout the school year. The report contended that a better balance for learning and assessment was needed to ensure optimal learning opportunities for students.

The Education Department head office, titled Education and Manpower Bureau (EMB) was responsible for the implementation of the new curriculum program.

The EMB issued 15 booklets introducing teachers to the new concepts and providing many practical examples. In particular, they issues a comprehensive document, "School Policy on Assessment - Changing Assessment practices" which highlighted:

- connections between curriculum and assessment,
- emphasizing assessment for learning,
- understanding formative assessment,
- planning how to bring about a better balance between formative and summative assessment,
- connecting formative assessment and feedback with learning.

To encourage teachers to undertake more formative assessment, along with many other innovatory requirements, "seed" project officers were employed to try to develop techniques to assist the classroom teacher. It was the task of the seed teachers to generate practical, school-based examples of how formative assessment might be brought about. A number of resources were produced including
"Assessment for learning resource banks". These were made available on the Web and also distributed widely to schools.

Yet it was evident from the interviews conducted by one of the authors that assessment in Hong Kong schools is still largely driven by summative, high stakes examinations. Classroom teachers are very keen to get good academic results for their students and so will only use formative assessment to find out student mistakes. All assessments count towards the final mark. This negates any benefits for students in terms of their self-concept and self-image.

There are currently a number of research projects in Hong Kong which are examining innovative forms of assessment, especially formative assessment.

The Learning Oriented Assessment Project (LOAP) was a three-year University Grants Committee (UGC) project in 2003 - 2005. This project focused on developing awareness and good practices in learning-oriented assessment. The objectives of LOAP included:

- create more awareness of the role that formative assessment plays on student learning,
- develop experimentation and trialling of innovative assessment practices,
- designed to enhance learning and
- disseminate and promote effective assessment practices.

Over the three-year period, LOAP officers produced a number of resource packs, reports and papers, held seminars and developed web sites. Some major papers which were presented at the OAP conferences included the topics of "Changing conceptions of self-assessment" (Boud, 2005); "Students independent learning" (Mok, 2005) and "Learning oriented assessment" (Joughin, 2005).

New projects on assessment have recently been funded by the Quality Education Fund such as "Assessment for productive learning" and by the EMB, such as "Assessment for literacy".

Yet, despite the vigorous and wide ranging development of formative assessment principles and practical examples by the EMB head office and numerous school-based projects by "seed" teachers, there is little evaluative evidence to indicate that teachers are more aware of and are incorporating formative assessment techniques into their teaching.

Changes to assessment at the senior secondary school level, including the opportunities for teachers to include up to 10% - 20% school assessments as part of the total assessment, might be an indication that more flexible approaches to assessment may be occurring.

**The Use of Formative Assessment in Slovenian Schools**

The Second World War was a defining moment for the Slovenian education system, where the government defined rules as to how and what to assess regarding student's knowledge. The analyses of these different governing laws or "key rules" in assessment knowledge had two main concept points and one downside: Firstly, there was the practice where the teacher would give the student a numerical grade as a form of feedback for student knowledge at the end of their learning process. Secondly, and a very important point, was regarding the formative assessment approach in which a teacher could run completely through the entire learning and teaching process and give instructional or verbal feedback to the student according to the amount of knowledge that student acquired or showed.
at the time of assessment. Formative assessment was a key component to a students' assessment during these past fifty years. The majority of the time, a numerical grading system was used as the primary form of feedback with an occasional written and/or verbal comment. Furthermore, teachers were not required to inform their students as to which form of assessment they will use (comment, instructional or numerical grade), thus leaving the students in the lurch – the downside. It is next to impossible to even consider addressing formative assessment when teachers use a numerical grading system, which cuts the learning process into small steps or phases, for producing a true and "authentic" grade. Formative assessment was basically feedback in the form of a numerical grade and given at the very end of the student's learning process.

In all these fifty years, students, parents and teachers voiced their opinion that we should change our system in assessing knowledge for the apparent reason that it was just not good. Other than the obvious reasons for giving a numerical grade to students, which was feedback for their diagnosis in the initial phase of the learning process or in the first step of the student’s knowledge, marks were awarded as a consequence (when a student was not paying attention or listening in class) and as a motivational tool. This was very prevalent in the sixties. The key rule of the sixties could be said to be the decade where the teacher must control his or her students' knowledge in all phases of the learning process with each "controlled" assessment being finalized by a numeric grade for feedback.

In the seventies, the key rules not only dictated teachers to, but also required them to incorporate formative assessment in a diagnostic approach. Šilih was an important and influential pedagog in Slovenia who made a profound impact in our education system with regards to assessment knowledge. He clearly stated that all teachers should diagnose the students in search for causes in their learning disturbances (Šilih, 1970).

Šilih did not quite manage to delve further into his quest in finding a solid conclusion to the process in assessing knowledge because he still thought, at that time, that the grading at the end of the assessment period should be equivalent to a final examination. Nor did Šilih (1970) propose any other forms of summative assessment, and as a result, teachers lacked the knowledge underlying these key rules, thus continuing with the traditional numerical grading system for formative assessment and woven it together with summative assessment. At that time there was no clear cut line between formative and summative assessment. Both forms of assessment were intertwined together because of the lack of teaching time, so some of the teachers went very quickly thru the formative assessment with no real regard to Šilih's recommendations. In summary, the seventies were a decade where the teachers gave fewer numerical grades at the end of the assessment period than in the sixties, and the assessment knowledge came only at the end of the learning term.

The eighties brought about a new law and also new key rules in assessing knowledge: teachers should or had to along with the appropriate forms and methods of pedagogical work ensure student participation in formative assessment. But there was still one drawback which was also in the key rules - the teacher was required to give the students a numerical grade as the form of feedback at the end of the learning process, the same as the seventies. The eighties were not successful in managing to separate both formative and summative assessment: again there was no distinct nor defined line between formative and summative assessment due to the numeric grading system used, thus leaving teachers clueless as to how to improve their students' knowledge. Students learned for the sole purpose of obtaining better grades and not for the purpose of learning to acquire knowledge. The teacher used assessment knowledge mainly for identifying errors or gaps in the students' knowledge. This system of assessing generated a great deal of fear among students, especially among those with high abilities and talents (those students whom normally have shown to have higher grades already).

In the nineties, there was a new law prepared for compulsory education which was accompanied with renewed key rules. The main aim was that the assessment knowledge was one of the forms of formative assessment which was used for assessing and for evaluating, and was more personally or individually oriented. The key rule stated that formative assessment should be in the form where teachers stimulate their students to participate and be involved in their own learning process. One of the
key rules highlighted and prescribed that an authentic two-way process between students and teachers exist where bilateral feedback (teacher-student) is provided in reaching learned goals. There was still one main drawback in assessing knowledge: the key rule expressed that the teacher should assign a numerical grade for formative assessment. During this era, assessment knowledge was more oriented towards the individual and not the group. There was still a considerable amount of written marks with even more school subjects at the secondary level and with even more stress imposed on the students. Students therefore had to be prepared, for at any given time they could be formatively assessed in any subject on a daily basis. This thus caused a shift in thinking and influenced the way students contemplated as to which upper secondary school would best provide them with the highest possible grades for upper school matriculation. This stress "domino-ed" downward into the last three years of the lower secondary school, forcing teachers to provide students with exact dates for formative written assessments. This period of "forecast" grading did not go as the teachers intended as several students were absent during the assessment dates.

In the 21st century, we have made great strides and improved the key rules. The foremost aim for teachers in 2003 was for them to collect data and accept the students' learning process when doing formative assessment. The following principle rule was that formative assessment should take place at the beginning (input), in the middle (process) and at the end (output) of the learning process for all students. The key rule also explained that formative assessment was to be used as a form of assessment in recognizing students' understanding (comprehension) and learning objectives, including analyzing and improving the grounds which determine and put limits on the success of the student's learning process.

First and foremost, the history of key rules very clearly indicated that the teacher's comments and data collected in formative assessment should not be transformed into numerical grades. An additional and equally important rule was that teachers could start with summative assessment knowledge only when both the students and the teacher recognized and accepted the student's knowledge in the new learning aim or topic, it was considered sufficient enough, and that the aim was reached. Only then could the teacher proceed with summative assessment; however, in practice the teacher then had two completely unconnected and separate phases for assessing knowledge:

First - formative assessment. This was when the teacher gave the student feedback on what the student was capable of reaching and what the student still had not known by the assessment date. In other words, the student was assessed based on what was required of them according to the state curriculum standards. The teacher’s comments were generally of poor quality: normally they were oriented to the whole group and not to the specific individual. Instructions were told in a frontal manner for all students at the same time and the forms of motivation were through the "regurgitate after me" method or the "parrot effect". The teachers motivated their students with such phrases as: "you should learn more", "you should try harder", "you are not studying enough", "you didn't try hard enough"!
Second - summative assessment- These were in the form of exams and were considered normal for subjects which used the paper and pencil test.

The drawback to these past 50 years was that we had not generated or formulated feedback in the form of formative assessment that we were looking for. We did come very close to a fair and sound solution with Šilih's proposed pedagogical suggestion; however, the key rules and the practical elements never really materialized and seemed rather strained, although the teachers really tried to do away quantitatively with marks and more with individual teaching and learning. This was still more of a behaviorist than constructivist paradigm in assessment knowledge. These ascertainments have lead us now to applicable project work at the National Education Institute Slovenia, in seeking ways to try to improve the classical and obvious downfalls from our past. The amount of information we have collected over the years has lead us to conclude that it is necessary to change our approach in the way we do formative assessment and propel ourselves towards the more constructivist learning model. This will hopefully generate a summative assessment reform where we could include more than just written
test results, but more from the formative assessment in the form of a portfolio for summative assessment knowledge.

In brief, the Ph. D thesis done by Natalija Komljanc, on the analyses of the key rules from the past fifty years, was accomplished with the use of empirical analyses in 2000: a questionnaire was sent to students in the forth and seventh classes, their parents and teachers in their schools. The H-square method (an analysis for the correlation between students, teachers and parents) was used.

The empirical analysis collected show that pedagogical communication in our schools still operates on a one-way system. For the majority of the time, the learning process is oriented in the manner where the teacher demonstrates the new topic; a very large percentage of the time the teacher illustrates very general instructions, questions and marks. The frontal method is still the primary choice of instruction and very prevalent in our classes. The teacher only concerns him/herself with the reference aims and written standards in the syllabus. Rarely do teachers follow the needs of each individual student; however, the teachers will give more attention to students who are in need of help academically. A lot of teachers are just not capable of teaching in a multi-leveled classroom.

There are differences in the way information is perceived between students and teachers.

  Differing frequent perceptions:
  1. how student feels during the assessment periods,
  2. didactic instructions on what is being learned,
  3. didactic instructions on how something is learned.

These results are the starting point for research and application projects in the next 5 years:

• Establish participant interest in authenticating and deepening education and professional development or training, and assessing knowledge using the constructivist model for authenticating formative assessment.
• Benefits of using a computer programme for developing formative assessment.
• Write teacher’s instruction manuals for summative and formative assessment.
• Proposals for renewing key rules in our national education system.

Concluding comments

There are several recognizable similarities regarding formative assessment knowledge between Hong Kong and Slovenia, not to mention some differences as well. The most prominent difference between the two countries is that Honk Kong started their reform in improving the formative assessment system in schools nearly ten years ago. Unfortunately, we are unable to provide more precise information or a more concrete answer with regard to the quality of assessment knowledge between Hong Kong and Slovenian teachers.

We can simply conclude that both countries not only recognize the importance of the qualitative benefits of formative assessment knowledge, we also share similar strategies for improving formative assessment - especially in formative assessment feedback in our schools. Hong Kong and Slovenia think that it is very important not just to put formative assessment key rules in our country’s legislation, but we should also work with the teachers in the learning process. This would mean being in constant and direct contact with teachers at schools, as well as including parents and students in assessment knowledge; these ideas are new for both parents and students, not only for the teachers. All three parties should recognize the benefits of formative assessment with the clear intention of getting students to recognize their ability and potential in achieving a higher level of knowledge. It is perhaps for this reason that both countries spend a great deal of time, energy and even money in improving formative assessment. This has been accomplished through producing booklets which provide proposals for better summative and formative assessment, for professional development, and for information for teachers, students and parents on how each of them can cooperate and participate in
enriching student knowledge. At present, Slovenia is preparing a new curriculum programme for
teaching and learning at both the primary and secondary level of education. The framework of this
programme is included and follows the aims in bettering formative assessment knowledge.

Hong Kong and Slovenia acknowledge that the main point in formative assessment is in the way
positive feedback is presented; for instance Ramaprasad (1983). Another aim of both countries is to
increase the forms of feedback regarding the process of "learning to learn". We will only improve
formative assessment feedback when we work towards doing more qualitative instruction for the
purpose of ameliorating individualization in the learning process in our schools.

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