# A CASE STUDY OF FORMATIVE ASSESSMENT IN A CHINESE HIGH SCHOOL

Ying Tang
Shenzhen City Xin'an Middle School, China
email:tangying88forever@yahoo.com.cn

**Abstract:** Nowadays in China, high school assessment is based solely on academic examination scores, which take the place of well-rounded assessments that should be given to students. The present assessment ignores the differences among individuals and goes against a people-oriented spirit; thus, it is not scientific. This one-sided assessment has caused many negative effects on students and society, and it is not beneficial to students' well-being. The author performed a study on a formative assessment method using a Portfolio for keeping a record of English learning while growing up to change the present situation of students being tired of study due to low scores. The assessment allows students to understand that their low scores are not because they lack a gift for learning languages, but because they themselves think they lack the ability to learn a foreign language, which leads to their unwillingness to learn English (Ames 1992; Vispoel & Austin 1995). The research examines 122 year-11 senior middle school students' views of the formative assessment method and their improvement in examination scores through the assessment over a period of one to two years. Qualitative and quantitative data were gathered via a questionnaire and interviews. All the data show and prove that the students who have been assessed using formative assessment enjoy going to school and have made more progress than those assessed using summative assessment. This assessment has been warmly welcomed by students, whether they are at a higher or a lower English level.

**Keywords:** Formative assessment; case study of formative assessment; implementation methods and achievements

Abstrak: Dewasa ini di China, penilaian sekolah menengah atas didasarkan hanya pada nilai ujian akademis, yang mengambil alih penilaian lengkap yang seharusnya diberikan pada siswa. Penilaian yang ada mengabaikan perbedaan diantara individu siswa dan melawan semangat yang berorientasi pada individu, sehingga tidak ilmiah. Penilaian satu sisi ini telah menimbulkan banyak efek negative pada siswa dan masyarakat, dan tidak bermanfaat bagi kebaikan siswa. Penulis melakukan kajian terhadap metode penilaian formatif dengan menggunakan Portfolio for keeping a record of English learning while growing up untuk mengubah situasi kini siswa yang lelah belajar karena nilai rendah. Penilaian itu memberi kesempatan siswa untuk memahami bahwa nilai rendah mereka bukan karena mereka tidak berbakat untuk belajar bahasa, sehingga membuat mereka tidak mau belajar bahasa Inggris (Ames 1992; Vispoel & Austin 1995). Penelitian ini meneliti pandangan 122 siswa sekolah menengah kelas 11 terhadap metode penilaian formatif dan peningkatan mereka dalam nilai ujian melalui penilaian selama masa satu sampai dua tahun. Data kualitatif dan kuantitatif dikumpulkan melalui angket dan wawancara. Semua data menunjukkan dan membuktikan bahwa siswa yang telah dinilai menggunakan penilaian formatif senang pergi ke sekolah dan menghasilkan kemajuan yang lebih banyak dibanding mereka yang dinilai dengan penilaian sumatif. Penilaian formatif ini disambut hangat oleh para siswa, baik mereka yang tingkat bahasa Inggrisnya rendah maupun tinggi.

**Kata kunci:** Penilaian formatif, studi kasus penilaian formatif, metode penerapan dan prestasi

At present, most of China's high school education assessment is only based on examination scores, namely academic summative assessment, which takes the place of such well-rounded assessments as virtue, intelligence, physical education, arts, labor and so on that should be given to students. As long as the student's score is the highest, he is regarded as the most successful student, disregarding his bad behavior or unwholesome thoughts. Other students consider him to be a model to learn from, and even treat him as an idol. This student's high score can conceal everything else and acts as a camouflage, covering up his shortcomings. On the contrary, students with low test scores are considered to be bad students and are ignored by both teachers and classmates, even if they have done their best and are very talented in other aspects.

This one-sided assessment leads to students' singular pursuit of higher test scores, and they do not pay attention to their behavior or to improving themselves in the area of moral character. They are self-centered without showing concern for others and are unwilling to participate in activities that serve society. Some even resort to bad measures in order to get higher scores, such as cheating on exams. Some students are even proud that they have succeeded in cheating during exams without being caught. As a result, the school cannot make achievements to society or meet society's requirements. On the contrary, they do harm to our society.

In addition, students sit in the classroom all day in pursuit of test scores and do not have time to engage in physical exercise, which results in the majority of students becoming near-sighted and many students being poor in health. Schools mainly compete in students' getting high scores in their senior middle school

entrance exams and college entrance exams and do not have time to care for students' mental health. As a result, there are some cases of high school students who have committed suicide as the result of not being able to overcome the difficulties and setbacks in their lives (news.163.com). Moreover. China's current education assessment forces all students to consider attending college as the only path to a person's success. This idea ignores the differences that exist between students, and it goes against a humanistic spirit, so it is scientific assessment method. not Because every student's level in a particular subject is different, and his starting point is not the same due to different levels of intelligence and talents, how can we compare students in a score-based examination to see who is a hard-working and who is a "good" student?

The reality is that a society needs people of all trades. Therefore, the success of our school education lies in enabling every student to discover his own strengths, experience success, and enjoy going to school. The author once took part in an Australian high school's semester award presentation and every teacher, every student with parents, some successful alumni and celebrities and guests were invited to attend. It featured outstanding students in all the areas of virtue, intelligence, arts, labor and various sports such as basketball, soccer, and baseball and so on, who were praised and given awards. The number of students who went to the stage to receive awards rose above 80% and the students and parents were very happy. This presentation demonstrated that only such a diverse style of assessment can enable every student to enjoy going to school.

The purpose of the formative assessment is to change the current

situation that involves academically poor students detesting going to school because of their current poor performance in exams. It wants poor students to understand that their low scores are not because they do not have a gift for learning languages, but because they believe they lack the ability to learn English, which leads to their unwillingness to learn English (Ames 1992; Vispoel & Austin 1995). Meanwhile, the formative assessment makes it clear to students that only by persisting in working hard every day can they improve their English step by step.

Formative Assessment is a method for providing feedback to teachers and students over the course of instruction (Boston, 2002). Black and William (1998b) defined assessment broadly to include all activities that teachers and students undertake to get information that can be used diagnostically to alter teaching and learning. Under this definition, assessment includes teacher observation, classroom discussion, analysis of student work, homework, tests and so on.

The most helpful type of feedback on tests and homework is specific comments about errors and specific suggestions for improvement, which encourages students to focus their attention thoughtfully on the task rather than on simply getting the right answer (Bangert-Drowns, Kulick, & Morgan, 1991; Elawar & Corno, 1985).

Boston (2002) pointed out that when how teachers know students progressing and where they are having trouble, they can use this information to make necessary adjustments, such as re-teaching, trying different approaches, or offering more practice opportunities. These activities can lead to improved student success. This type of feedback may be especially helpful to lower-achieving students because it emphasizes that students can improve by hard work, rather than remain underachievers due to a lack of innate ability.

Formative assessment supports that all children can achieve high levels of learning and it is against the view of students that attributes poor performance to lack of ability and therefore causes students to become discouraged and unwilling to go on learning (Ames, 1992; Vispoel & Austin, 1995).

Feedback given as part of formative assessment helps learners become aware of any gaps that exist between their desired goal and their current knowledge, understanding, or skill and guides them through actions necessary to obtain the goal (Ramaprasad, 1983; Sadler, 1989).

Black and William (1998a) conducted an extensive research review of 250 journal articles and book chapters winnowed from a much larger pool and concluded that formative assessment techniques produce significant learning gains as measured by comparing the average improvements in the test scores of the students involved. This style of assessment was shown to especially help low-achieving students and students with learning disabilities.

Two experimental research studies (Fontana & Fernandes, 1994; Frederikson & White, 1997) have shown 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.

### **METHOD**

In this study, before teaching each module (book), the whole class of 60 students was divided into 10 study groups, with each group made up of 6 (six) students. A responsible group leader was chosen from each group to take the charge of the group's English study. The leader was responsible for the group's everyday oral activities, reciting the text, after-class reading, group assignments, helping poor students in the group and so on. Every student's study of a unit and a module was assessed through the *Portfolio for keeping* 

a record of English learning while growing up. So far, some people have done experiments using portfolios, and they have been proven very useful in promoting students' growing up and development (Frazier & Paulson, 1992). This is due to the fact that they are based on the school's education and teaching objectives and deliberately collect a student's works and other evidence which reflect the student's hard work and progress. This allows him or her to clearly set and achieve his/her goal as well as motivates him or her to achieve more through his/her recollection changes. Furthermore, it displays student's strengths and weaknesses through system analysis rational of and interpretation (Dong, 2002).

The portfolio is different from others because it has many other functions besides the portfolio's general function, namely, the function of Part 7 (see below). On its cover, a student writes down his/her name, grade, school number, and group number, while on the other side of the cover is the table of contents. The portfolio consists of eight parts: 1. Study plan for learning English; 2. Test scores & homework grades; 3. Teaching goals and requirements of a unit; 4. Self-assessment for the study of a unit; 5. Analysis and summary of the progress and failures on a unit's study and test; 6. Analysis and summary of the progress and failures on a module's study and exam; 7. Exhibition of achievements; 8. Multi-assessments on a semester's study and the teacher's comments.

First of all, every student is required to make a study plan for learning the module. Each unit's teaching goals and requirements are photocopied from the teachers' book. After learning a unit, every student is make a to detailed self-assessment, summarize the unit's study and analyze what s/he did in the test and his/her detailed measures on how to Then, improve. the class course representative collects each portfolio and marks down each student's homework completion and its grade. Then, the teacher reads each of the student's self-assessment and summary and gives comments and advice to help solve their problems in time. After the module exam. each student writes his or her analysis. The checks and supervises teacher. then. students' work and writes his or her comments and advice. Finally, at the end of a semester, students finish the final module assessment form. First, each student assesses him/herself on his/her study process and achievements. Then, students have a group assessment. the class assessment and the teacher's assessment to get the overall score. In addition, the teacher writes down the module and semester comments for each student.

### **Steps for Implementation**

Step 1: Handouts are given out to each student to make his/her own portfolio. The most important point of this step is that the importance and functions of the portfolio are made clear for and realized by every student. After that, each student writes his own study plan.

Step 2: (After finishing learning a unit) Each student has his/her self-assessment according to the teaching aims and requirements, fills in the assessment form, analyzes and summarizes his study for this unit and his advantages and disadvantages in the test, and writes down detailed measures on how to make progress. The course representative fills in the homework grade and test score.

Step 3: (After finishing learning a module) After the module exam, every student analyzes and summarizes his/her study for this module, his advantages and disadvantages in the exam, and writes down detailed measures on how to make progress.

Step 4: (At the end of a semester) Every student is assessed fully by himself, his group, his class and the teacher on the semester's study.

Cooperative learning is carried out throughout the whole process, which fully embodies the student-centered teaching. It not only eliminates students' fear of learning, cultivates and promotes the friendship between their classmates, but also enables them to learn from each other. obtains collective wisdom, and thus, makes them love eventually Cooperative learning helps students to gain necessary communicative abilities, which include communicative strategies, emotion controlling abilities, relevant social knowledge and social skills. It also makes of students aware the different characteristics and effects of cooperation and competition so as to lay a foundation for their future life (Kang 2006).

## Five parts of the summary form of self-assessment

- 1. Every student is required to have a self-assessment on the following: Previewing; Memorizing new words; Listening in class; Taking notes: Morning reading; Morning study attitude; Class involvement; Group discussion: Finishing homework; Evening study. The assessment is accomplished by ticking the answers honestly from three options. example: for finishing homework, the answers would be: a) can't finish on time and partially copied from others; b) Just finished teacher's tasks; c) Finished independently and earnestly on time. (The above detailed assessment causes students to realize that they have to do well in all the above aspects if they want to learn English well.)
- 2. The analysis and summary of a unit's study:

Main achievements from autonomous, cooperative and inquiry study; Thoughts and gains from discussing with classmates; Problems in their

English study. (Besides finishing the textbooks' requirements, this part also checks the student' study attitude and feelings, group study and learning problems, so that it can reflect the student's study from all sides.)

- 3. Study feedback for the teacher:
- 3. Students' problems that need the teacher's help; advice for the teacher
- 4. Parents' assessment and advice.
- 5. Self-assessment grade.

### **Participants**

122 students from two ordinary classes from Xin'an Middle School, a national model senior middle school in Shenzhen China. 2004-2005 school year, one Year 10 ordinary class with 60 students. 2005-2006 school year, two Year 11 ordinary classes with 122 students.

### **Qualitative Data Collection**

Semi-structured interviews with 10 students were carried out and audio-taped. These were performed with five students from each of the two classes chosen at random by drawing numbers from a box in July, 2006. The question that formed the focus of the interview was "What is your opinion of our formative assessment (portfolio)?"

### **Quantitative Data Collection**

A questionnaire was carried out with all the 122 Year-11 students in July, 2006. Students were asked to choose the answers from A. strongly disagree, B. disagree, C. neutral, D. agree, and E. strongly agree. They filled in their answers in their answer sheets and the school grading machine was used to retrieve the data from the student sheets. The answer items on questionnaire included the following: (1) I like this kind of assessment, (2) This assessment has made me gain confidence in learning English step by step, (3) This assessment has promoted

communication between me, my parents and the teacher, (5) This assessment has helped me improve my English.

# FINDINGS AND DISCUSSION Interview:

All the 10 students made comments that suggest they like the formative assessment (Portfolio). These comments are given below.

Student A: I like the portfolio because it can make me conclude the experience of successes and failures so as to improve my English study step by step.

Student B: With the parents, students and teachers' involvement, the portfolio has become a bridge to communicate with each other and a place to tell our thoughts.

Student C: It can promote the communication between the teacher and students. What's more important is that I can tell the teacher the problems in my study in time so that I can get his or her help in time. In that case, I won't accumulate my questions and become confused.

Student D: I was inspired by the teacher's encouraging words and motivated to study hard. The portfolio can promote the feelings and love between the teacher and students. It also helps me improve my study methods.

Student E: My English was very poor.

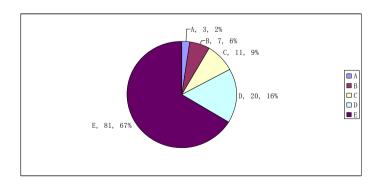
Although I studied hard, and I couldn't improve it. Before adopting the portfolio, I was always regarded as a low level student and because of that, I once gave up studying English. Now with the new assessment, the teacher always praises me and says that I am a good student, which made me gain confidence and my English has improved accordingly.

Student F: At the beginning of the school term, the teacher made the assessment form of the module study public, which gave me goals of my study. Moreover, this assessment, which focuses on the process of everyday study, has made me clear that whether I am a top student or a low level student depends on my everyday work and the improvement of our scores lies in my accumulation of knowledge. Only by working hard can I make achievements. At the same time, as long as I make an effort, I am sure to achieve something.

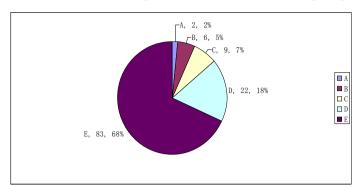
### Questionnaire

The following graphs show the number and the percentage of students who chose: A. strongly disagree, B. disagree, C. neutral, D. agree, and E. strongly agree for the 4 questions above.

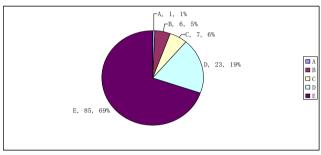
### 1. I like this kind of assessment.



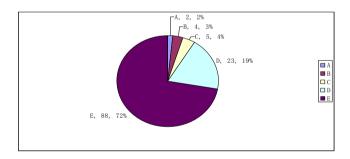
2. This assessment has made me gain confidence in learning English step by step.



3. This assessment has promoted the communication between me, my parents and the teacher.



4. This assessment has helped me improve my English.



### **Examination scores**

In the final exam of the 2004-2005 school year held by Bao'an Education Bureau (The test papers which were bound

to conceal the students' names were marked together by all senior 1 teachers from the district), the students made outstanding achievements.

Class	Number	Average	Difference in	score	from	pass	Difference	in pass	ratio
	of	score	other classes			ratio	from other o	lasses	
	students								
1	61	50.7	+ 5.3			32.8	+ 15.5		
2	60	52.4	+ 3.6			36.7	+ 11.6		
3☆	60	56				48.3			
4	61	53.6	+ 2.4		•	31.1	+ 17.	2	

Note: Altogether there, were 8 classes.

Class 1, 2, 3, 4 are ordinary classes--- the lowest level.

Class 5 & 6 are key classes--- the second level classes

Class 7 & 8 are experimental class--- top

classes

One student from class 3 ranked No. 11 in the grade, and six students were among the top 100 in the grade. The final exam of the 2004-2005 school year, compared with the placement test at the beginning:

Class	Number of	Average	Average	Difference in average
	students	score (pt)	score (ft)	score from other classes
3	63	75.2	75.6	+ 0.4
4 ☆	62	74.5	76.8	+ 2.3
5 ☆	61	72.7	76.4	+ 3.7
6	61	78.2	76.9	- 1.3

Note: Altogether there were 8 classes.

Class 3, 4, 5, 6 are ordinary classes--- the lowest level.

Class 2 & 7 are key classes--- the second level classes.

Class 1 & 8 are experimental class--- top classes.

The average score of the whole grade only increased by 0.1 point.

#### **Discussion:**

The present research has supported and developed the findings mentioned in the literature review as follows. The findings support the claim by Boston (2002) that the formative assessment is able to find out how both learning and teaching are progressing and where students are having trouble, so that the teacher can use this information to make necessary adjustments on teaching, and students can adjust their learning to solve problems in time. These activities did lead to improved student success.

The findings support the claim by Bangert-Drowns, Kulick, & Morgan (1991) and Elawar & Corno (1985) that the teacher's specific comments about errors encourage students to focus their attention thoughtfully on the task, rather than on simply getting the right answer, as is often the case with summative assessment. The research also supports the claims by Ames (1992), Vispoel & Austin (1995), and Boston (2002) that formative assessment enables students to do away with the

detrimental view that they cannot learn English well due to a lack of innate ability.

In addition, the following claims can be made based on the findings of the present research: (1) The teacher's specific encouraging comments on students' study made them confident and motivated them to continue working diligently, particularly to low-level students because they lack of confidence and perseverance, (2) teacher's specific suggestions improvement guided students to be on the right track of learning English well, (3) The detailed self-assessment on a unit's study can enable every student to improve his or her English as long as s/he finishes his/her daily tasks according to the requirements, no matter how low his/her English level is. (4) The formative assessment can enable every student to experience success so that all of the students enjoy going to school, (50 The analysis and summary of each unit's test enables each student to realize his or her advantages and unique talents so he or she can be confident and learn English well step by step, as long as he or

she works hard. (6) The formative assessment focusing on students' autonomous, cooperative and inquisitive study enables students to learn from each other and make progress together through group work, while cultivating a cooperative spirit, (7) The formative assessment enables students to be the owners of their assessment so that they are motivated to feel and participate a sense responsibility later (8)on, The multi-assessment leads a greater to understanding among teachers, students, while and parents, making their relationships closer, and (9) The exhibition of study achievements enabled students to share their work and feel confident and proud.

We can also say that summative assessment makes students, especially poor students, give up learning English and students' development, hinders while formative assessment enables students to improve English step by step. Formative assessment can also enable students to tell the teacher his or her problems immediately so as to solve them in time, and can guide students' study and makes them understand that only by working hard day by day can they make progress. At the same time, as long as they make efforts, they will surely gain something, whereas portfolifo assessment is a good place for teachers students parents. and communicate with each other. The findings also indicate that teacher's encouraging words and comments, especially written ones, can have a great impact on students, which can motivate them to learn English, while self-assessment promotes students' learning English. In general, assessment can enable students to gain confidence and enhance the communication between the teacher and students.

In order to make students remain active and involved, the teacher must make each student know the importance of the assessment clearly from the onset. When students are finishing each task, the teacher should tell them what to do using clear and exact instructions to ensure that every student finishes the task according to the requirements. In addition, the teacher should walk around the classroom to supervise and offer help to those who need it. Furthermore, after learning a unit, the teacher should make sure that every student has handed in his/her portfolio. The teacher should, then, be sure to read each portfolio carefully, answer questions and write comments. Each time, the teacher should not forget to praise those who have finished the tasks well and timely in public so as to make others follow them.

For the difficult tasks, such as the study the analyzing plan and summarizing a unit's study, the teacher should collect a few excellent ones as samples and use a slide show to give students a model to work with so they may revise their tasks. Moreover, the teacher should explain the benefits from writing one's own strong and weak points to encourage them to be honest with themselves. Furthermore, the teacher should check every student's portfolio conscientiously and meticulously to find out whose portfolio is not finished correctly and which students has difficulty in finishing the tasks. Then, the teacher should coach the students individually. Because it is difficult for students to finish the tasks in English, the teacher should not require that all students write in English, but encourage those of a higher-level to try.

When forming groups, the teacher ensures that each group has a mixture of high-level students and lower-level students. At the same time, each group should include both boys and girls to encourage them to make progress together. The teacher should write positive and encouraging comments to increase the confidence of students (State Council Document 2000). At the same time, whenever a student tells the teacher s/he

wished to be kept private from the rest of the class, the teacher should respect the student's privacy.

Each student must make his/her study plan according to his own circumstances and should not copy others. The study goal should not be too high or too low, but rather one that s/he can achieve with an amount of effort. His/her goal should be to produce a motivation that encourages him/her to work hard every continuously. The analysis and summary of a unit's study is the most difficult part, and it cannot be dealt with hastily, with a few words. It should include four parts: a. Main achievements from autonomous, cooperative and inquiry study, which requires the students to write down what they have learned according to the aims and requirements of the unit; b. One's learning enthusiasm and initiative, which requires writing out their study attitude and feelings honestly; c. learned What they have from communicating with their classmates, which requires that they write down their group work and their feelings achievements. d. Their problems, which requires that they write down their own problems in English. Whenever they have questions, they should put it forward without hesitation for group work and solve it through group discussions. When their group cannot solve the problem, they should report it to the teacher.

The analysis and summary of a test should include: a. The points the students received for each test task and their own strengths and weaknesses; b. Whether they have made progress, compared with the previous examination; c. Their ranking among the students in their class; d. Their successful and unsuccessful experiences e. Their measures or steps to be taken.

The students should make full use of group work and improve their abilities in analyzing and solving problems. Whenever they have questions, do not hesitate to ask. They should not withhold from asking

questions for the sake of not losing face. At the same time, they should not hide their weaknesses or mistakes; instead, they should write down their failures and analyze the reasons for them.

They have to change their view from focusing on examination scores only to, instead, focusing on the process of everyday study to enjoy happiness and each individual success from the process. For the semester of final self-assessment, they should mainly assess their study attitude and how they cultivate and improve theur study abilities. During their everyday study, they should collect works they feel satisfied with, and learn how to encourage theirself and experience success. They should be fully aware of the benefits of the formative assessment and be an active participant.

The items of the unit's test and the module exam are mostly multiple choices, which cannot show a student's English level completely. Various test items and oral test should be added. All the data in the research were collected in a Chinese high school and we still do not know if the portfolio can be used in other cultures. So, its cross-cultural validity needs to be verified.

### **CONCLUSION**

The achievements coming from the portfolio can give students timely and effective assessment and encouragement on their daily study. It enables students to experience success and cooperative study to improve their interest and confidence in learning English. The study shows that formative assessment using portfolio promotes students' development regardless of whether they are good students or poor students.

The present research has proved that the students who have been assessed by formative assessment enjoy going to school more and have made obvious progress compared to those assessed using summative assessment. The formative assessment approach has been warmly welcomed by students.

### REFERENCES

- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, 84(3): pp. 261-271.
- Bangert-Drowns, R.L., Kulick, J.A., & Morgan, M.T. (1991). The instructional effect of feedback in test-like events. *Review of Educational Research*, 61(2): pp. 213-238.
- Black, P., & William, D (1998a).

  Assessment and classroom learning.

  Assessment in Education, 5(1): pp. 7-74.
- Black, P. & William, D. (1998b). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan*, 80(2), pp. 139-148. (Available online: http://www.pdkintl.org/kappan/kbla98 10.htm.)
- Boston, C. (2002). The concept of formative assessment. *Practical Assessment, Research & Evaluation*, 8(9). Retrieved June 27, 2011 from http://PAREonline.net/getvn.asp?v=8 &n=9.
- Dong, Q. (2002). *Basic principles and applications of the portfolio:* Shanxi Normal University Press.
- Elawar, M.C., & Corno, L. (1985). A factorial experiment in teachers'

- written feedback on student homework: Changing teacher behaviour a little rather than a lot. *Journal of Educational Psychology*, 77(2), pp. 162-173.
- Fontana, D., & Fernandes, M. (1994). Improvements in mathematics performance as a consequence of self-assessment in Portuguese primary school pupils. *British Journal of Educational Psychology*, 64(3), pp. 407-417.
- Frazier, D., & Paulson, L. (1992). How Portfolios Motivate Reluctant Writers. *Educational Leadership*, 49, pp. 62-65
- Frederiksen, J.R., & White, B.J. (1997).

  Reflective assessment of students'
  research within an inquiry-based
  middle school science curriculum.
  Paper presented at the annual meeting
  of the American Educational Research
  Association, Chicago, IL.
- Ramaprasad, A. (1983). On the definition of feedback. *Behavioral Science*, 28(1), pp. 4-13.
- Sadler, D.R. (1989). Formative assessment and the design of instructional systems. *Instructional Science*, *18*(2), pp. 119-144.
- Vispoel, W.P., & Austin, J.R. (1995).

  Success and failure in junior high school: A critical incident approach to understanding students' attribution beliefs. *American Educational Research Journal*, 32(2): pp. 377-412.