

Assessment for Learning: Learning Goals, Traffic Lights, Exit/Entry Cards/Descriptive Feedback

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Action Research Question:

Given that there is a large gap between student self-assessment and student performance, is it possible to narrow the gap by using numerous assessment for learning strategies on a regular basis so that the students' self-assessment accurately reflects their performance?

Background:

For an entire semester from September 2009 to January 2010, I made observations of my three grade 12 chemistry classes' ability to self-assess. I found that there was a discrepancy between how they perceived their level of understanding and how they actually demonstrated their understanding of the learning goals. Some students underestimated their level of understanding while others thought that they understood more than they actually did. Knowing this, I tried a number of assessment for learning strategies with my students, hoping to make them more self-aware and better able to accurately assess their level of comprehension of the lessons. The strategies included the use of learning goals, entry cards and descriptive feedback. Over the course of the semester, I noticed that the students became much more cognoscente of their abilities and they began to develop proactive approaches to learning. The culture of the classroom gradually changed over time. It changed from a culture of isolation and fear of questioning to an accepting culture that promoted self-advocacy. By the end of the semester, all of the students could accurately assess their concept attainment, they could articulate their needs using very specific language and they took ownership of the assessment for learning strategies used in the classroom. Watching my senior students become more self-aware and improve academically over the course of the semester, I wondered if I could replicate the results with the younger (grade 9) students I would be teaching during the second semester.

Assessment for learning is an ongoing process that helps students understand the concepts being taught and helps teachers make adjustments prior to an evaluation. The purpose of assessment is not to determine a mark but to improve student learning. During the assessment for learning process, the teacher acts as a coach rather than a judge, providing continuous, detailed feedback to the student about how they can do better. During the assessment for learning process, the teacher gathers information about student achievement. This information can be gathered prior to the learning or during the learning process. Methods of assessment can include diagnostic assessments, observations, performances, conferencing, entry cards, written assignments, etc... All assessment for learning strategies should be based on learning goals. Learning goals are brief statements that describe for students what they should be able to do by the end of a period of instruction. Learning goals should be written in student friendly language and should be shared at the outset of learning and referred to over the course of the lesson. "Students can only achieve learning goals if they understand those goals, assume ownership of them, and can assess progress." (Nicol & Macfarlane-Dick, DI Educator's Package Enhancements) In order to succeed, students need to know what is expected of them, they need to know how to improve and they need to be provided with opportunities to show their progression.

Reading:

Atkin, J. Myron et al. *Everyday Assessment in the Science Classroom*. Arlington, VA: NSTA Press, 2003. Print.

Brookhart, Susan. *Exploring Formative Assessment (The Professional Learning Community Series)*. Alexandria, VA:ASCD, 2009. Print.

Davies, Anne. *Making Classroom Assessment Work*. Courtenay, BC: Connections Publishing Inc., 2007. Print.

Reeves, Douglas et al. *Ahead of the Curve, The Power of Assessment to Transform Teaching and Learning*. Bloomington, Indiana: Solution Tree, 2007. Print.

Assessment for Learning Strategies Taken From:

Kathleen Gregory, Caren Cameron, and Anne Davies. *Knowing What Counts – Self-Assessment and Goal Setting: For Use in Middle and Secondary School Classrooms*. Courtenay, BC: Connections Publishing Inc., 2000. Print.

Keeley, Page. *Science Formative Assessment – 75 Practical Strategies for Linking Assessment, Instruction and Learning*. USA: Corwin Press & NSTA Press, 2008. Print.

Ontario Ministry of Education. *Differentiated Instruction Educator's Package Grade 7 & 8*. Queen's Printer. 2007.

Ontario Ministry of Education. *Differentiated Instruction Educator's Package Enhancements*. Queen's Printer. 2008.

Assessment for learning strategies:

<i>Learning Goals</i>	Brief statements that describe in student-friendly language what students should know and be able to do by the end of a period of instruction.
<i>Traffic Light</i>	Strategy students can use to assess their progress toward achieving the learning goals.
<i>Exit/Entry Cards</i>	Written student responses to questions related to the learning goal(s), completed at the end/beginning of a class.
<i>Descriptive Feedback</i>	Communicating to students what they are doing well and what improvements they need to make in relation to the learning goal and providing them with the opportunity to develop their skills.

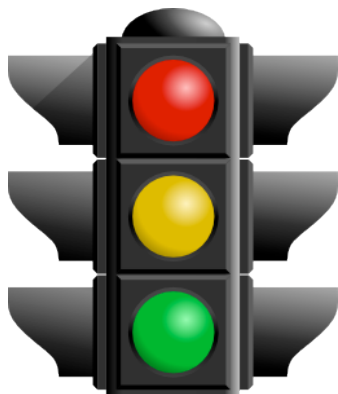
Length of Study:

This study was completed over the course of an entire semester, from February 2010 to June 2010. The participants included all of the students in my grade 9 academic science class (SNC1D). The class consisted of six girls and fifteen boys, four of which had IEP identifications. Many of the students had non-identified behavioral issues and the class's overall academic performance was very weak. The average and median of the students' performance on their first science test was 47.5% and 50.1% respectively. After providing the students with a few opportunities to self-assess their understanding of the day's learning goals and then comparing that information to their actual performance in relation to the same learning goal using entry cards, I noticed that there was a significant discrepancy between how the student self-assessed their understanding and how they actually performed. The students in my class did not have an accurate perception of their level of comprehension of the learning goals.

Starting Points:

On a daily basis, learning goals were posted on the blackboard and discussed throughout the lesson. Before leaving class, students were provided a card with their name on it and asked to indicate their level of understanding of the learning goals on the traffic light pocket chart at the front of the room. Then the following day, the students were provided with an entry card based on the previous day's learning goal to demonstrate their level of understanding. A comparison was then made between how the students assessed their level of understanding on the traffic light and how they actually performed

on the entry card. The results from the traffic light were compared to the results from the traffic light using the following criteria:

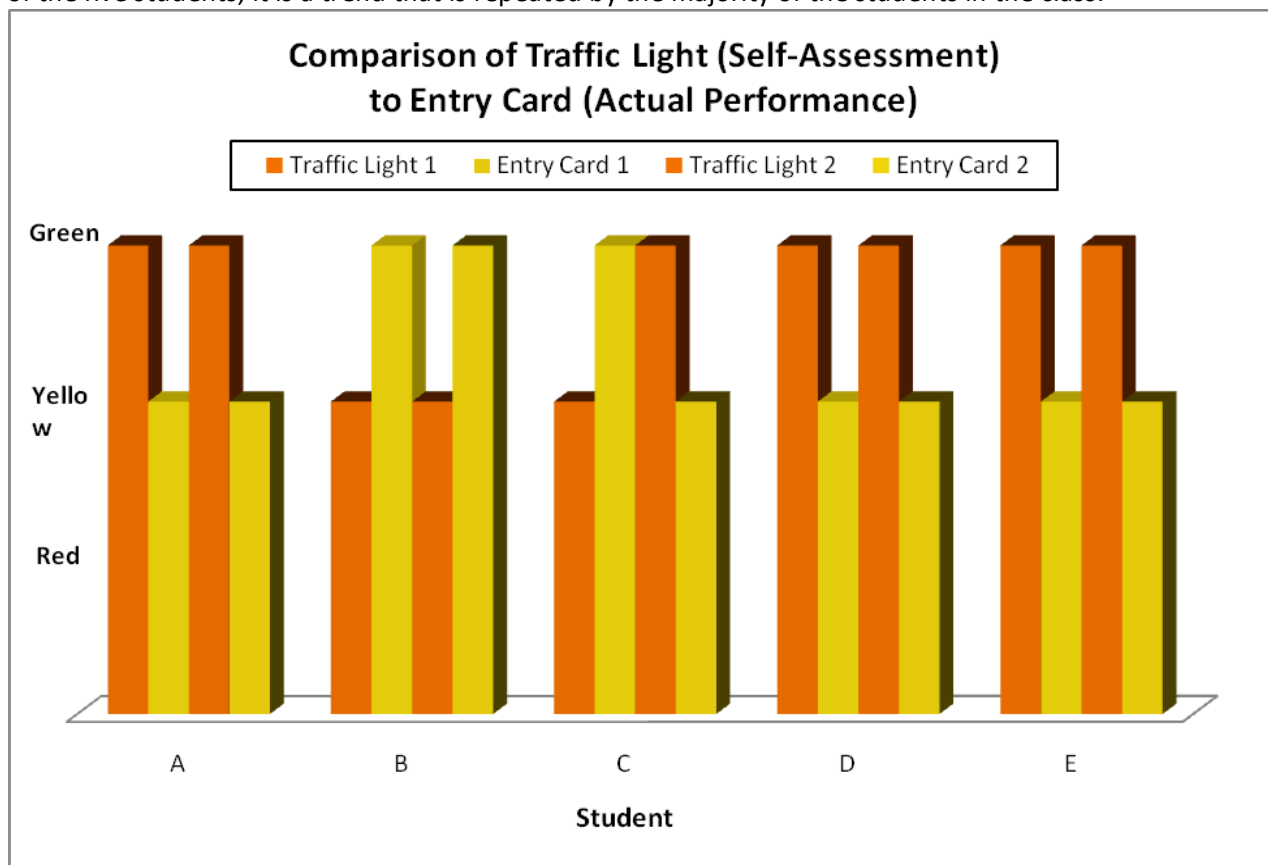


No, I don't understand (Traffic Light)
Performance of 49% or less (Entry Card)

I'm not completely sure (Traffic Light)
Performance of 50% to 69% (Entry Card)

Yes, I understand (Traffic Light)
Performance of 70% or greater, provincial standard (Entry Card)

The graph below shows a comparison of the self-assessment to the actual performance of five students based on two separate assessments. The results below show that the five students could not accurately assess their level of comprehension. Some student thought that they had a better understanding of the content than actually did while others underestimated their abilities. The data is not only representative of the five students; it is a trend that is repeated by the majority of the students in the class.



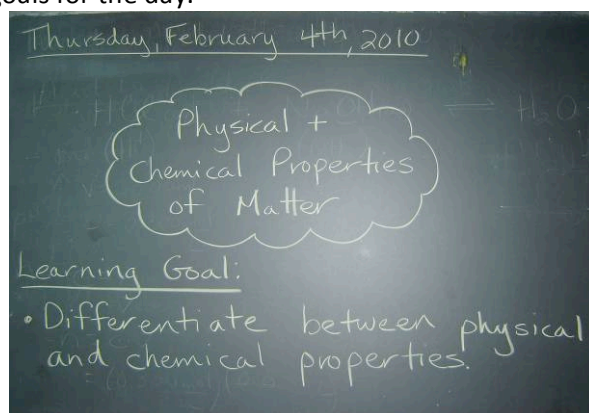
Monitoring Progress:

As explained above, over the course of the semester I will compare each individual student's traffic light (self-assessment) data to the entry card results (demonstration of concept attainment/performance) that they complete when they enter class the next day. This will be my quantitative measure of the students' self-assessment abilities in relation to their performance. When there is no longer a gap

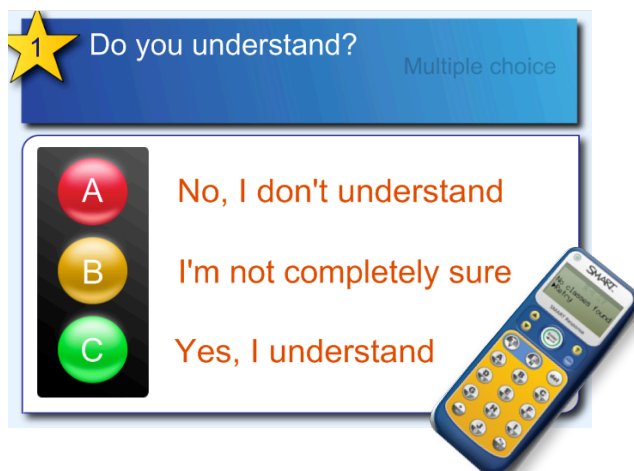
between the students' self-assessment data and the entry card results, I will know that they have become proficient at self-assessing their level of comprehension. I will also be making qualitative observations about the climate of the classroom and how my teaching evolves as a result of using assessment for learning strategies in the classroom on a regular basis.

Teaching Actions and Strategies:

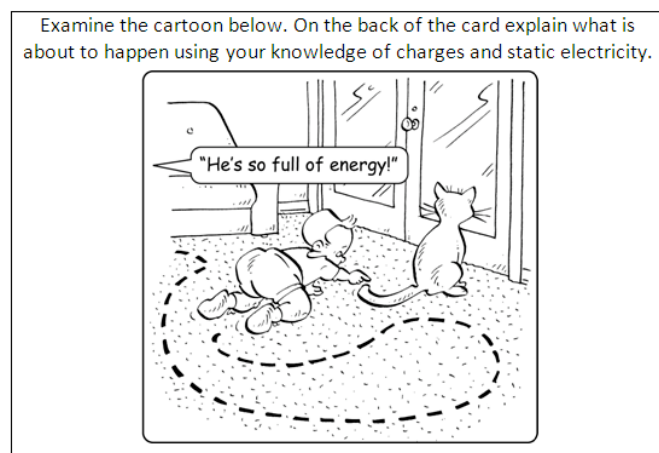
Learning goals were posted on the blackboard in my classroom on a daily basis. They were explained and discussed at the beginning of each lesson and they were referred to numerous times throughout the course of the lesson. The learning goals provided the students with a sense of what they were expected to know and retain by the end of the period. It also provided them with the purpose and context of the day's lesson. The students used the learning goals to self-assess their understanding of the day's lesson. They indicated their level of understanding on the traffic light chart based on learning goals for the day. The learning goals helped the students to organize their thinking and easily extract the important parts of the lesson. Also, students who came to class late were able to get organized and follow the lesson much more quickly because they could readily get a sense of the purpose of the lesson by looking at the learning goals for the day.



On a daily basis, the traffic light strategy was used as a means for the students to self-assess their understanding of the day's learning goals. As explained in more detail above, the students were provided with a name card and they were required to identify their level of understanding of the lesson prior to leaving class on either a pocket chart or with the use of Smartboard clickers. This provided the students with an opportunity to see their level of understanding in relation to the rest of the students in the class. Often some students thought that they were the only ones who didn't understand the day's lesson, but when they saw all of the students' self-assessment results displayed, they either felt relieved because they were not the only one struggling or they realized that they needed to come and see me for some extra support. Based on the results of the students' self-assessment on the traffic light, I would often modify my lesson for the next day if I noticed that a number of students were struggling with a concept that I just taught. The next day's lesson would often include either a review or a mini-lesson of the previous day's content or I would reteach the entire lesson if the majority of the students were struggling. If only a small group of students identified themselves as either red or yellow, I would often create groupings based on the results to provide the students with some opportunity for some remedial assistance.



Entry cards were used a couple of times a week with the students. This strategy provided me with an opportunity to see how the students actually understood the concepts presented in class without evaluating their performance. It was also a quick method for me to address any misconceptions the students may have had from the previous day's lesson. This strategy provided the students with timely feedback on how well they understood the concepts. It also allowed them to improve and refine their skills prior to an evaluation. Students often thought they understood a concept, but when completing the entry cards, they found that they required more detail in their answers or a better understanding of the learning goals. Entry cards were completed in either paper form or using the Smartboard clickers. The answers from the entry cards became the driving force for the content of the lessons for the day. I would often take up the answers to the entry cards with the students or address specific misconceptions they might have had. By the time the students completed an evaluation, they had a good understanding of the content and the types of questions that I would ask on a test. A great deal of improvement in the students' academic results was found as a result of the use of entry cards.



The cat is about to get a Static ~~charge~~ Shock. When the babie crawls around on the carpet it builds up static negative charges, and when ~~the~~ the babie touches the cat that is full of positive charges it will shock it.

Descriptive feedback was used periodically throughout the semester. In science, I would often use descriptive feedback on any skill that the students were developing such as writing lab reports or on entry cards which provided the students with an opportunity to practice prior to a final evaluation. Providing descriptive feedback was very time consuming in the beginning, but as students started reading the comments and using the suggestions, I found that I had fewer suggestions to make over the course of the semester. The quality of the student work improved immensely.

Findings:

Based on the comparison of the traffic light (self-assessment) data to the entry card (performance) results, it was shown that by the end of the semester, the grade 9 students still could not accurately assess their abilities. A comparison of the self-assessment and performance results for four of the students in my class can be found on graphs 1-4 in Appendix A. These results reflect the trend of all the students in my class.

A few interesting findings occurred as a result of the assessment for learning strategies used in my classroom. Tables 1 & 2 in Appendix A show a comparison between the students results on the entry cards for a unit and their performance on the corresponding unit test. The entry card results show that a number of students struggled with the content of the entry card topics, however, the success rate on the test was much higher than that of the entry cards. This proves that the use of entry cards along with the clarification of misconceptions and the review of topics where the students struggled, lead to greater success among the learners. Also, graph 5 in Appendix A shows the percent distribution of the student results based on three of the four evaluation categories. Eighteen of twenty students failed the thinking & inquiry portion of the test. Upon review of the entry cards used in the electricity unit, I noticed that I had not provided the students with any entry cards from the thinking & inquiry portion of the unit. Students had not been provided with an opportunity to practice their skills in this area. Given the results, I provided the students with some entry cards based on thinking & inquiry and all necessary content was reviewed. The students were then provided new questions based on that portion of the test and those results replaced their original mark. Graph 6 in Appendix A shows the student results based on the retest. After the retest, only eleven students failed the thinking & inquiry component of the test as opposed to eighteen. This is a marked improvement over the first test, but more work is still required to improve these results. By not placing an emphasis on this category on the entry cards, the students did not get an opportunity to practice their skills prior to the evaluation.

Conclusions:

Although my grade 9 students did not improve their ability to self-assess, they did show an improvement in their academic performance over the course of the semester due to the use of assessment for learning strategies in the classroom. Their class average on tests increased from 50% on the first test to 79% and 68% on the next two subsequent tests. Entry cards proved to be a very effective strategy to help students identify their areas of need. They also helped me to ensure that all the students were progressing along the learning continuum and that they were continuously improving their skills. Given that I had such great success getting my senior students to self-assess, I am anxious to learn if the inability of my grade 9 students to do the same is a result of their age and level of maturity or if it is a result of an isolated phenomenon with that particular class. I intend to continue this research and these assessment for learning strategies with my grade 9 class next year to see if the same results are replicated. I am also interested in learning if other factors such as gender and academic ability influence a student's ability to self-assess.

My Key Learnings:

Changing my classroom climate from a focus on evaluation to a focus on assessment for learning has greatly affected my teaching practice. To begin with, I used to spend numerous hours continuously marking (evaluating) student assignments. Now with the use of assessment for learning, the level of marking has decreased exponentially. Instead of marking every single worksheet or activity the students complete, I now focus on assessing and providing feedback on some of their work such as entry cards, which is far less time consuming. Based on my current practice, I am now only evaluating a few major assignments, tests and the exam. The assignments that I do mark have far less errors in them because

the students have had numerous opportunities to practice their skills and to refine their knowledge prior to the evaluation. Secondly, when I focused on evaluation, the lesson plans were always prepared ahead of time and when teaching, I rarely deviated from them. Now, my lesson plans are continuously evolving to meet the needs of the students. The results from the assessment for learning strategies used in class drive the pace and content of the daily lessons. I still have a lesson planned for the day but now I modify it regularly. Finally, the culture of my classroom has changed from one where there was a fear of questioning and culture of isolation to a culture of acceptance where the students are encouraged to become self-advocates. At the beginning of the semester, students could not clearly articulate their needs. Now with the use of assessment for learning strategies, the students ask for very specific and personalized assistance. Assessment for learning encourages students to take ownership of their learning and it enhances all of the learners' abilities regardless of initial level of understanding.