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Student Perceptions of the Implementation of Formative Assessment: A Royal St. George's College Case Study

Andrew Pyper

Formative assessment has been widely implemented for its well-researched positive benefits. Despite this, an absence of research exists when it comes to student evaluations of its implementation. To address this for my school, Royal St. George's College or RSGC, I asked students questions about formative assessment according to the Nicol & Macfarlane-Dick (2007) model in both a survey and an interview. The results revealed that formative assessment allows students to learn about what good performance is, self-assess their own work, and focus on improving, not on their grades. That said, students could learn more if teachers were to make formative assessment more rigorous as well as, providing more feedback. Unfortunately, feedback is often formulaic, and when it is given students are not applying all suggestions or approaching teachers as much as they should. In addition, the results of this study reported that teachers should use feedback more frequently to learn about their students.

Keywords: formative assessment, formative feedback, formative grades, pedagogical practices, student perceptions, teacher feedback

Introduction

Many in the educational field are familiar with formative assessment as it has been implemented around the world for its positive benefits. Haroldson (2012) notes that formative assessment is divided into several categories. Those include the formative use of summative tests, questioning students to spark discussion and learning, and written and oral feedback during class and with class activities. Some of its positive benefits were discussed by Nicol and Macfarlane-Dick (2007) who, when combining pre-existing literature on formative assessment, found evidence that supports its implementation. They discuss how students need opportunities to develop self-regulation in school and

that formative assessment is the best way to do this. Also in that paper, the authors outline seven generally accepted key principles to help teachers implement formative assessment. These are as follows: formative assessment teaches students about what constitutes good performance, it improves a student's ability to self-assess, it teaches students about how they need to improve, it creates situations where students can discuss their learning with teachers, it increases self-esteem and motivation in students, it helps students achieve their academic goals and it allows teachers to tailor teaching around information gained from its implementation. Though the importance of formative assessment has been clearly studied, a gap exists between the idea and its implementation in reality. In-

terestingly, some research reports on student's perception of formative assessments when it has been implemented effectively; however, an absence of research is noted when it comes to student perception of the implementation of formative assessment. That is why I conducted a mixed-method case study at RSGC to address this gap. In the study, I combined a survey with interviews to discover whether the four types of formative assessment mentioned above match the seven key principles of its implementation that were also mentioned above. I also segmented this analysis into specific portions of the population by asking students about their grades and courses. Other schools can examine the RSGC case study as a model for how formative assessment is being used effectively or ineffectively at their respective schools.

Literature Review

Introduction to Formative Assessment

Formative assessment has been widely implemented in schools across North America. The purpose of this assessment is to create teacher feedback that students can learn to improve their understanding of content (Sadler, 1983). Formative assessment, therefore, is implemented through the formative use of summative tests, the questioning of students to spark discussion and learning, and the use of written and oral feedback during class and with class activities. In this way, formative assessment is set of tools that give formative feedback.

Chronology

Formative assessment became widely adopted by education systems across North America as views on teaching shifted. Historically, teaching was very one dimensional with teachers contributing to most if not all of the student's learning, but recent literature has discussed the importance of letting students participate in their learning (Barr & Tagg, 1995). More specifically, student-based learning seeks to encourage active learning, give students more responsibility, autonomy, and accountability, and create student and teacher interdependence (Lea, Stephenson, & Troy, 2003). It also reduces the gap between a teacher's

explanation and a student's understanding (Higgins, Hartley, & Skelton, 2001). This meant that educational experts started to lobby for the implementation of formative assessment in day-to-day schooling in the 1990's and early 2000's (Hutchinson & Hayward, 2005). Presently, formative assessment is still used widely in many education systems (Cotton, 2017). Researchers Nicol and Macfarlane-Dick (2007) went further than this and argued that formative assessment needed to be tailored for more student learning. With a sound basis for student-based learning and a subsequent sound basis for formative assessment, many researchers have found that formative assessment does have positive effects on student learning (Kingston & Nash, 2011)

Deconstruction of Formative Assessment

As stated earlier, researchers Nicol and Macfarlane-Dick (2007) found that student assessment should be tailored to create more student-based learning. They then combined this principle with pre-existing literature to create seven key principles for what formative assessment should do. Those seven principles, summarized below, act as guidelines for the effective implementation of formative assessment that encourages student-based learning and will be used later for the method.

Formative assessment teaches students about what constitutes good performance.

It improves a student's ability to self-assess.

It teaches students about how they need to improve.

It creates situations where students can discuss their learning with teachers.

It increases self-esteem and motivation in students.

It helps students achieve their academic goals.

It allows teachers to tailor teaching around information gained from its implementation.

Although many studies discuss similar attributes of correct implementation of formative assessment (Koh, 2010; Hobson, 1997; Orsmond, Merry, & Callaghan, 2004). I chose the model by Nicol and Macfarlane-Dick (2007) because it effectively combines all the attributes other studies have discussed in a clear and organized manner.

"Helps clarify what good performance is" (Nicol & Macfarlane-Dick, 2007, p. 205). Without formative assessment, students and teachers differ on their

understanding of goals (Norton, 1990). For example, research suggests that teachers cannot express all of the goals on a rubric in a way that a student will understand (Rust, Price, & O'Donovan, 2003; Yorke, 2003). Research has also stressed that students must understand teacher feedback in order for it to be effective (Hounsell, 1997). Formative assessment fills this gap by allowing students to better understand the goals set by the teacher (Nicol & Macfarlane-Dick, 2007).

“Facilitates the development of self-assessment...in learning” (Nicol & Macfarlane-Dick, 2007, p. 205). Students benefit from understanding what good performance is because they can use this as a basis for their own performance (McDonald & Boud, 2003; Taras, 2001; Taras, 2002; Taras, 2003). In order for them to understand what good performance is, they need to be able to assess their work. Through the integration of teacher feedback, formative assessment allows students to practice assessing their own work directly (McDonald & Boud, 2003; Haroldson, 2012).

“Delivers high quality information to students about their learning” (Nicol & Macfarlane-Dick, 2007, p. 205). Through formative assessment activities, students can read and act on teacher feedback. This helps them understand teacher expectations and enables students to apply their teacher's input (Nicol & Macfarlane-Dick, 2007). Teacher feedback should not be authoritative and strictly corrective but instead give the student a sense of what the teacher experiences when reading the work to shift the focus of high quality feedback towards the student (Lunsford, 1997). Teacher feedback should also be given regularly and consistently to maximize the amount of time students spend correcting their own work (Gibbs & Simpson, 2004).

“Encourages teacher and peer dialogue around learning” (Nicol & Macfarlane-Dick, 2007, p. 205). Even when students do get feedback from teachers, it is hard for them to understand what is written when trying to correct their work (Chanock, 2000). More formative assessment creates more opportunities for teachers and students to discuss their learning (Nicol & Macfarlane-Dick, 2007). When these discussions happen, students are better able to understand their expectations, discuss misunderstandings and questions with teachers, and get immediate feedback (Ni-

col & Macfarlane-Dick, p. 210).

“Encourages positive motivational beliefs and self-esteem” (Nicol & Macfarlane-Dick, 2007, p. 205). When assessments are given with grades, students focus more on the grades than on the feedback because of concerns over their grades and their ego. This means they often do not use the feedback to help their learning in the ways that have been listed above (Dweck 2000; Butler 1998; Butler, 1987). This then affects the motivation of students who either work harder to achieve a better grade or who take a low grade as a sign they should not try because they are not good (Nicol & Macfarlane-Dick, 2007). Formative assessment does not have these elements. Instead it focuses on the learning process (Nicol & Macfarlane-Dick, 2007).

“Provides opportunities to close the gap between current and desired performance” (Nicol & Macfarlane-Dick, 2007, p. 205). With many formative assessment tasks, teachers will give students the opportunity to apply the feedback they gave to improve their work. This then allows students to learn through the use of feedback (Nicol & Macfarlane-Dick, 2007).

“Provides information to teachers that can be used to help shape teaching” (Nicol & Macfarlane-Dick, 2007, p. 205). When teachers start providing a multitude of formative feedback they learn about the issues and abilities of each student, which can then be reflected in their feedback; more tailored feedback will then increase the effectiveness of the other principles listed above (Yorke, 2003).

Theory Versus Implementation

A substantial amount of research confirms the importance of formative assessment, a considerable amount of which has been included in this literature review. Now that a basis for the effective implementation of formative assessment has been established the next step is to discuss how the implementation of formative assessment differs from the theory. Differences in implementation often occur due to researchers having different interpretations of formative assessment. (Dorn, 210; Crossouard & Pryor, 2012; Clark, 2012). Given the theory and research has established the rationale and value of formative assessment, the problems mainly stem from an improper use of formative assessment. Understanding how formative assess-

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ment is being implemented is important to ensuring students are obtaining its benefits. In this study, I am focusing on one aspect of implementation, the role of the student in formative assessment.

Method

Research Plan

The goal of this study is to use student perceptions to determine whether or not formative assessment is being implemented correctly at RSGC. Through the review of relevant literature on the topic, we can be confident that formative assessment does help students if implemented correctly. Nicol and Macfarlane-Dick (2007) outlined seven key advantages of formative assessment that occur when it is implemented correctly. Student perception of formative assessment could, therefore, be broken down into student perception of each advantage in the model. In this study, students in the senior school, grades ten through twelve, were given surveys and were asked questions in a recorded interview. This study used stratified-random sampling to select students. The strata were based on grade level in order to ensure a complete representation of education levels, and as such, there were seven grade twelve students, six grade eleven students, and six grade ten students. All participants were male since RSGC is an all-boys school. Before students were asked the questions, they were given a definition of formative assessment and were informed that the study was meant to address their perceptions, not their desires. The questions, which are listed in Appendix A, are based on the seven key principles. They were answered by a yes or a no on the survey and were elaborated on during the discussion. The survey portion of the method gave quantitative data, and the interview gave qualitative data. In this way, the quantitative data gives basic answers to questions, and the discussion added explanations to these basic answers. Students were also asked during the survey portion about the academic path they are pursuing and their grades. This subdivides perceptions into certain segments of the school to more specifically target the weaknesses or strengths of the implementation of formative assessment. The questions are listed in Appendix B and students were given space to write a per-

centage grade, and boxes were given so students could check off the courses they are taking. There may be a separation between student perceptions and actuality, but the results of this study can be extended to explain the correct implementation of formative assessment or problems with this implementation. Other schools can then examine the RSGC case study as a model for how formative assessment is being used effectively or ineffectively at their respective schools. These insights can also then be used as a basis for studying specific strategies employed by RSGC or similar schools. Formative assessment has become an integral part of many schools, and it would be a waste of resources to be employing it ineffectively.

Justification

In this study, I collect both qualitative and quantitative data to make the research more meaningful (Creswell, 2013). By using both, the results are more likely to illustrate whether or not formative assessment is being implemented correctly. The purpose of this study is to focus on student perception because students are the ones who experience the effects of formative assessment. This same logic was used by Vandercruysse, Vandewaetere, Cornillie, and Clarebout (2013) who found that student perception of educational gaming needed to be evaluated to analyze its effectiveness. Additionally, this study used a case study method because this creates the most meaningful findings with limitations of time and money. In this study, I also segment the population based on subject area and on academic grades. The segmentation is based on subjects because the variety of pedagogical practices in specific subjects can create subject-specific perceptions and the segmentation is based on academic performance because on top of measuring intelligence separations in grades represent differences in work ethic and attitudes which that create performance specific perceptions (Ariani, 2016). The questions in this study are based on the study conducted by Nicol and Macfarlane-Dick (2007) and the reasoning for the questions can be found in the literature review. This model is also justified in the literature review. In addition, in this study I use grades ten to twelve because these students would be more familiar with formative assessment in high school.

Findings and Results

The findings and results of this study can be found below. Each category of the Nicol and Macfarlane-Dick (2007) model is listed with the relevant question number in addition to survey and interview data. See Appendix A for a complete list of the questions.

“Helps Clarify What Good Performance Is” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 1 Survey. As you can see in Appendix C, all of the participants stated that formative assessment does help clarify what good performance is.

Question 1 Interview. Many participants, when asked this same question in an interview, discussed that when the teacher provides feedback, their marking or comments provide insight into what they are looking for when summative assessments come around. For example, participant J states that formative assessment allows you to “see the lesson plans and how they’re set out, so everything kinda is laid out in front of you, so you can prepare for several assignments.” Participant C goes further into detail when they state that

“in Math for example, that they want you to just know... oh, at least, uh, specify you, uh, be strict about units, be strict about straight lines, and some may not, so it just makes it easier to tell what the teachers are looking for.”

However, participant N said that “there’s a disconnect, where sometimes they [teachers], uh, expect more than what they have in formative assessments.” This was also mentioned in other interviews.

“Facilitates the Development of Self-Assessment...in Learning” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 2 Survey. As stated in Appendix C, only two out of nineteen participants disagreed that formative assessment helps you develop self-assessment skills.

Question 2 Interview. Those that answered yes stated that formative assessment gives you information about what a teacher is looking for that you can apply when looking over your own work. They also state that it allows you to search for specific things in the future. For example, participant O states that “once I have an idea what the teacher is looking for, I can better assess my own work, and make sure that I’m checking all the boxes for...to get to improve my

mark overall.” Some also stated that formative assessment allows you to improve your knowledge and thus assess your future work. Participant G states that “I’ll learn more. If you see more feedback about your own work, then you’ll understand more and more what’s expected of you.” Participant N also brought up an interesting point when they stated that “I can tell that I got stuff wrong, instead of having it, uh, negatively impact my grade in a course, uh, have more incentive to make sure I get it right.”

“Delivers High Quality Information to Students About Their Learning” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 3 Survey. The first question in this category was whether students received actionable feedback regularly. Appendix C shows that, ten answered yes and, nine answered no. A majority of the science and engineering students in the sample population were concentrated into the yes category whereas those that answered no were from a variety of courses. Additionally, the average summative average of those who answered yes was 89.1% whereas it was 86.1% for those who answered no.

Question 4 Survey. The second question in this category was whether students apply the feedback they are given. Again, as displayed in Appendix C eleven answered yes and, eight answered no. The average summative average of those in the yes category was 89.9% and the average summative average of those in the no category was 86.4%. It is also interesting to note that the distribution of no answers was higher for grade ten students.

Question 3 Interview. Many students who answered no to the first question stated that the feedback they received was formulaic and not applicable. Participant G states that “On formative stuff, a lot of the time, they won’t really give you so much feedback, they’ll just give you numbers.” Students often discussed in other questions that the benefits of formative assessment are not as great because they do not apply all suggestions given to them.

Question 4 Interview. One of the central themes that came up was that participants often disagree with the teacher. Participant H outlines how they would not apply feedback “When I would disagree or I have a strong opinion on why I don’t want to have it or someone else has told me, otherwise.”

“Encourages Teacher and Peer Dialogue Around

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Learning” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 5 Survey. As displayed in Appendix C eleven students said yes an eight said no.

Question 5 Interview. Those students who answered yes said that they could gain more benefits from formative assessment if they talked to teachers. For example, participant P states that “It helps me point out mistakes that I’ve made, and then I can ask the teachers about what I can do or should do.” One of the main reasons participants mentioned for not talking to teachers was that the simplicity of the formative assessments means it is not needed. For example, participant J states that

“for formative learning in general, if it indicates that I need to maybe step it up, or study even more for that certain type of unit, or information, then, yes, for sure, I’ll approach the teacher, and really find out what needs to be done in order for me to achieve that better mark, but then in general, for formative quizzes, when usually maybe one out of one marks, or out of ten marks, and multiple choice, then I don’t think it really matters.”

Some also stated that they already talk to teachers with or without formative assessment.

“Encourages Positive Motivational Beliefs and Self-Esteem” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 6 Survey. The first question under this category was whether students are concerned with their formative grades. The data in Appendix C shows that only three students said yes.

Question 7 Survey. The second question under this category was whether formative grades affected students’ self-esteem. The same people who answered yes on the prior question also answered yes with the addition of three more people. The average academic average of these people was 84.5% compared to 88.8% for those who answered no.

For both questions, the majority of no answers came from people above grade eleven.

Question 6 & 7 Interview. Students did not elaborate beyond a yes or no in the interview.

“Provides Opportunities to Close the Gap Between Current and Desired Performance” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 8 Survey. All participants except for two answered yes to this question.

Question 8 Interview. The reasoning that the ma-

ajority of people gave was that when they applied given feedback or learned from their mistakes, they could improve their work in the future. For example, participant R says that

“I think if, uh, my...my grades do improve after formative assessment, because it gives me an idea of what the teacher is expecting. Um, and then also being able to apply their...their suggestions also, uh, improves, like, my work as well. So, yes.”

“Provides Information to Teachers That Can Be Used to Help Shape Teaching” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 9 Survey. Appendix C shows that for this question eleven people answered no and eight people answered yes. The average summative average of those who answered no was 89% and it was 85.9% for those who answered yes.

Question 9 Interview. One prevailing sentiment expressed by those who said no was that they do not notice teachers adapting their teaching to individual students. Participant M says

“I think they generally cater their teaching to the whole class, so I think it’s rare for someone, for them to change their style of teaching for one person, but I can definitely see it changing if, like, a whole class is, struggles with something.”

However, some said teachers would be happy to talk to you if you approached them directly. Another common sentiment was that teachers could not learn from summative use of formative tests because the marking was not individualized. For example, participant F states that “So, like obviously like I think of multiple choice questions, it’s...it’s really not gonna help them learn about you very much. So, it depends on the assessment I guess.”

Discussion

“Helps Clarify What Good Performance Is” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 1. The literature stresses the importance of students being able to understand goals set by the teacher, and it states that formative assessment does this when appropriately implemented. The fact that all participants agree shows that formative assessment is being implemented correctly in this respect. However, the assertion that formative assessments are easier

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than real assessments contradicts this slightly. If this occurs, students cannot use an easier formative assessment to learn about their performance when that will be lower on the real test.

“Facilitates the Development of Self-Assessment... in Learning” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 2. Again, the literature emphasizes the importance of students being able to assess their own work, and it states that formative assessment does this when implemented correctly. The fact that almost all participants agree shows that formative assessment is being implemented properly in this category.

“Delivers High Quality Information to Students About Their Learning” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 3. The literature states that to reap the benefits of formative assessment it must happen regularly. The fact that some people do not get feedback or that it is formulaic and not useful shows it is not being implemented correctly. As per the literature these students do worse on summative assignments than those that get feedback regularly. If the school were to address this issue, they should focus on and study formative assessments in non-STEM courses in more detail because these were both pointed out by the data and mentioned in interviews.

Question 4. The literature shows that to get the most out of formative assessment students must also apply changes a teacher gives them. This is shown by the fact that students who do use suggestions are better off academically than those who do not. The problem is that students disregard feedback they do not think is right or do not understand instead of approaching the teacher. This last part will be addressed later. Further research could be conducted to find out what types of feedback students disregard and how to stop this or why this is a problem with students in grade ten.

“Encourages Teacher and Peer Dialogue Around Learning” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 5. According to the literature, there is a disconnect between what a teacher writes and what a student understands. To understand entirely, students need to approach teachers with questions and concerns. For example, they could approach teachers with questions about the feedback they disagree with instead of disregarding it. Participants also pointed out in the interview that they do not discuss feed-

back with teachers because it is formulaic. Further researchers or the school could study what would happen if the style of feedback changed.

“Encourages Positive Motivational Beliefs and Self-Esteem” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 6. The literature makes it clear that since formative assessment does not affect academic standing students can focus on feedback, not on their marks. The fact that most students do not care shows that formative assessment is being implemented correctly. Further research could be conducted to determine whether the fact that students disregard comments is connected with a lack of concern.

Question 7. As stated before, the literature indicates that since formative assessment does not affect academic standing students can focus on feedback, not on their marks. Since most students' self-esteem is not affected, it is being implemented correctly. The fact that students with lower grades are more concerned if researched further could prove the literature. Also, if students with low grades are affected by formative assessments, they could actually be lowering their self-esteem. In the last two questions, the students from lower grades were most concerned. This could also be researched further.

“Provides Opportunities to Close the Gap Between Current and Desired Performance” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 8. One of the fundamental principles of formative assessment is that it allows a student to improve a piece of work and learn while doing it. The fact that most agree shows that this is being established at RSGC.

“Provides Information to Teachers That Can Be Used to Help Shape Teaching” (Nicol & Macfarlane-Dick, 2007, p. 205)

Question 9. According to the literature an added benefit of formative assessment is that when a teacher does it, they learn about their students and can tailor their future feedback. The survey showed that eleven people found teachers did not do this and eight did. This shows that to an extent teachers are not learning about their students learning. Furthermore, some people who said yes were then uncertain in the interview. Participants stated that feedback giving is often formulaic. However, this could be a mechanism teachers use to learn about their students. Since students are limited in their perspectives, further research

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could interview teachers at RSGC to determine if they do this. However, one common theme was that because feedback was often not individualized, especially on tests, it would be hard for teachers to tailor their feedback. Further research could also examine if teachers would learn more about their students if more students discussed formative assessment with their teachers.

Limitations

Some limitations of this study include the fact that perceptions of young students are not always accurate, some people had different answers to the survey than what they expressed in the interview, and that it was evident that some participants did not understand questions. It is also possible that a certain type of student was the most likely to agree to participate thus adding bias to the sample population. The small number of people who did agree to participate also restricts this study's ability to make a conclusion. Also, there may be a disconnect between the experiences of male students in this school and female students in other schools thus reducing the ability to extend the results to other schools. In addition, despite being instructed not to, some participants answered based on desires, not experience. Lastly, different participants could have differing ideas on relative topics like what constitutes regular actionable feedback.

Conclusion

The primary goal of this study was to examine the student perceptions of the implementation of formative assessment. By segmenting this according to the Nicol and Macfarlane-Dick (2007) model and by investigating student's perceptions in each of these categories the results of this study could specify implementation perceptions. The results revealed that formative assessment is being implemented in a way that allows students to learn about what good performance is and self-assess their own work. That said, students could learn more if teachers were to make formative assessment harder. This study also revealed that not enough feedback is being given, it is often formulaic and not useful, and when it is given students are not apply-

ing all suggestions or approaching teachers as much as they should be. However, despite a slight concern, formative assessment is allowing students to focus on improving, not on their grades. Students also find that their work does improve when implementing it. In conclusion, teachers should use feedback to learn about their students more often.

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Appendix A

Survey and Interview Questions about Formative Assessment

Principle	Questions
"Helps clarify what good performance is" (Nicol & Macfarlane-Dick, 2007, p. 205).	1. Does feedback given for formative assessment tasks help your understanding of performance goals set by the teacher?
"Facilitates the development of self-assessment...in learning" (Nicol & Macfarlane-Dick, 2007, p. 205).	2. Does formative assessment feedback improve your ability to assess your own work?
"Delivers high quality information to students about their learning" (Nicol & Macfarlane-Dick, 2007, p. 205).	3. Do you receive actionable feedback regularly? 4. Do you apply all suggestions given to you by a teacher?
"Encourages teacher and peer dialogue around learning" (Nicol & Macfarlane-Dick, 2007, p. 205).	5. Do you have more conversations with teachers about your learning when you have been given formative feedback?
"Encourages positive motivational beliefs and self-esteem" (Nicol & Macfarlane-Dick, 2007, p. 205).	6. Are you concerned with your formative grades? 7. Do formative grades affect your self-esteem?
"Provides opportunities to close the gap between current and desired performance" (Nicol & Macfarlane-Dick, 2007, p. 205).	8. Do you believe your work improves after you apply suggestions given during formative assessment?
"Provides information to teachers that can be used to help shape teaching" (Nicol & Macfarlane-Dick, 2007, p. 205).	9. Do you find teachers are able to learn about your learning when they have given you formative feedback?

Appendix B

Personal Survey Questions

Topic	Questions
Academic Performance	<p>10. If you feel comfortable doing so, please record your summative average? If you do not know your average please estimate or extrapolate based on previous performance. Your answers are completely confidential.</p>
Subject Area	<p>11. Please place an X next to the types of courses you are pursuing or plan to pursue. If you are unsure select undecided.</p> <p>Business</p> <p>Fine Arts</p> <p>Humanities/Social Sciences</p> <p>Science/Engineering</p> <p>Undecided</p>

Appendix C

Survey Results

Grade	Participant	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
10	A	Yes	No	Yes	No	No	No	Yes	Yes	No	80%	Science/Engineering
10	B	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	89%	Science/Engineering
10	C	Yes	Yes	No	No	No	Yes	Yes	No	No	88%	Science/Engineering
10	D	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	78%	Humanities/ Social Sciences, Science/ Engineering
10	E	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	84%	Fine Arts, Humanities/ Social Sciences, Science/ Engineering
10	F	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	92%	Humanities/ Social Sciences, Science/ Engineering
11	G	Yes	Yes	No	No	Yes	No	No	Yes	No	86%	Humanities/ Social Sciences
11	H	Yes	Yes	No	Yes	No	No	No	Yes	Yes	84%	Business
11	I	Yes	Yes	Yes	No	Yes	No	No	Yes	No	95%	Science/Engineering
11	J	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	85%	Business, Humanities/ Social Sciences

STUDENT PERCEPTIONS OF THE IMPLEMENTATION OF FORMATIVE ASSESSMENT

11	K	Yes	Yes	Yes	Yes	No	No	No	Yes	No	93%	Science/Engineering
11	L	Yes	Yes	No	No	No	No	No	Yes	No	80%	Business, Humanities/Social Sciences
12	M	Yes	Yes	Yes	No	Yes	No	No	Yes	No	92%	Science/Engineering
12	N	Yes	Yes	No	Yes	No	No	No	Yes	No	89%	Science/Engineering
12	O	Yes	Yes	Yes	Yes	No	No	No	Yes	No	91%	Science/Engineering
12	P	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	86%	Science/Engineering
12	Q	Yes	Yes	No	No	No	No	Yes	Yes	Yes	89%	Science/Engineering
12	R	Yes	No	Yes	Yes	No	No	No	Yes	No	95%	Business, Humanities/Social Sciences
12	S	Yes	Yes	No	Yes	Yes	No	No	Yes	No	90%	Business