## **Student Social Interactions and Peer Assessment**

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#### **Abstract**

Peer assessment is a formative assessment practice that is commonly used in the British Columbian school system. Academic literature supports peer assessment as part of effective formative assessment practice; how students interact during peer assessment, however, is not as well understood. Through a study conducted with grade six and seven students at a public school in a British Columbian school district, this study sought answers to two core questions: "What do students say they understand about the process of peer assessment?" and "What social dynamics do I observe, as my students' classroom teacher, during peer assessment?" Data was collected through a sequence of group mind maps and individual feedback forms. These tools targeted student responses to peer assessment during a short story writing unit. The methodology used a general inductive approach. The findings and discussion reveal that students respond to social dynamics first and teacher-guided procedures second when undergoing peer assessment.

**Keywords**: peer assessment; social dynamics

# **Dedication**

This capstone project is dedicated to Sindy Zhao. Her love and support throughout my MEd journey helped make it a success.

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#### Introduction

As a practicing teacher that specializes in grades four to seven in the school system in British Columbia (BC), I use different formative assessment methods. Peer assessment is one type of formative assessment method, and its uses for student learning form the core of my research activities. In this section, I will first define the role of feedback in learning and share the rationale for my research questions. Second, I will explore how peer assessment is relevant to my practice. Third, I will share my expectations and biases around peer assessment, as these are vital to unpack before exploration of the literature.

#### **Research Topic and Key Questions**

Feedback is a response by an agent such as a teacher, parent, peer or lived experience to an individual's performance or understanding (Hattie & Timperley, 2007). Peer assessment, a type of assessment for learning, is a method for generating and obtaining feedback. It is a type of formative assessment where individuals carefully evaluate the quality of their peers' work through feedback activities that reference learning-related product criteria (Hwang & Chang, 2021; Topping, 1998). Peer assessment can take a range of different formats and provide quantitative feedback, qualitative feedback or a mixture of both. Furthermore, it can be characterized by uni-directional approaches, where individuals simply provide learning feedback to their peers, or bi-directional approaches, where the peer being assessed can also respond to the feedback they are given (Hwang & Chang, 2021; Yu, 2011).

Based on a review of the literature, there appeared to be room for greater research and understanding regarding the interactive behaviours that students demonstrate during peer assessment activities (DeLuca et al, 2018; Hwang et al., 2014). Furthermore, while the literature has made some connections to how social dynamics impact peer assessment activities through a lens of gendered power structures (Crossouard, 2012) and competitive cultures (Tenório et al., 2016), further exploration of how social dynamics affect peer assessment could be conducted through qualitative studies. In addition, this exploration could enhance educators' understanding of how

students experience peer assessment and develop their peer assessment skills. Given these gaps in the literature, this study addressed the following key research questions:

- 1. What do students say they understand about the process of peer assessment?
- 2. What social dynamics do I observe, as my students' classroom teacher, during peer assessment?

#### **Research Interests and Relevance**

My research interest in peer assessment was sparked by the gaps between my growing academic knowledge base on assessment and my teaching experiences. The literature is generally positive regarding the learning outcomes of peer assessment and its contribution to developing student metacognition of learning (Anastasiadou, 2013; Harris et al., 2015; Hwang & Chang, 2021; Hwang et at., 2014; Lai & Hwang, 2015; Wind et al., 2018). I, however, have struggled in the past to achieve a high level of meaningful peer-to-peer feedback and evidence of enhanced metacognition during assessment practices within my own teaching contexts.

In addition to addressing the gaps I experienced between research and practice, my research is relevant because understanding peer assessment and student interactions can provide a window into how students perceive the learning process and engage with each other about their learning. Furthermore, the literature suggests that high-quality peer assessment has the potential to improve metacognition of the learning process, and position students as active agents of learning within the classroom (Anastasiadou, 2013; Hwang et al., 2014). Improving my practice would allow for higher-quality peer assessments and greater skill development among my students.

# **Biases and Expectations**

Based on my experiences with children aged nine to twelve giving each other feedback, I've seen that such feedback is often of mixed quality or simply incorrect. For example, a student might say that their classmate maintained eye contact throughout a verbal presentation when in fact that classmate maintained very little eye contact with their audience. When designing my proposal, I recognized my potential skepticism towards peer assessment working well with this age group. I needed to be mindful of

confirmation bias when uncovering research that might suggest that not all elements of peer assessment meaningfully enhance student learning outcomes. With that said, I maintained the expectation that the results of my reading and research would reinforce that peer assessment as a whole is beneficial for student learning.

#### Literature Review

When conducting my literature review, key themes that emerged included: formative assessment, peer assessment, types of feedback, metacognition and social dynamics. After unpacking the areas of consensus and conflict present in each theme, I will elucidate how my research might address possible gaps in the literature.

#### **Formative Assessment Overview**

Work published since Black and Wiliam's seminal work on formative assessment builds on their findings that formative assessment "is at the heart of effective teaching" (1998, p. 140). As such, the literature presents a consensus that formative assessment enhances the processes of teaching and learning (Anastasiadou, 2013; Harris et al., 2015; Hwang & Chang, 2021; Hwang et at., 2014; Lai & Hwang, 2015; Wind et al., 2018). As formative assessment consists, however, of many complex processes and the scope of this paper is focused primarily on peer assessment, the literature examined for this review focused on subsets of formative assessment. For instance, Anastasiadou (2013) concluded self-assessment and peer assessment practices foster students' development of their own "cognitive, metacognitive, motivational and affective abilities" (p.192). This is because students are acquiring the skills necessary to evaluate their own work and the work of others through these assessment practices. Although formative assessment was not discussed as a whole, the merits of peer assessment were linked to effective teaching and learning.

#### Peer Assessment

Shifting from formative assessment as a whole to peer assessment, peer assessment is defined as "an arrangement in which individuals consider the amount, level, value, worth, quality, or success of the products or outcomes of learning of peers of similar

status" to criteria or benchmarks (Topping, 1998, p. 250). Peer assessment, however, is intended to guide the process of improving work quality, and is not about evaluating the work to determine a score or grade. Hung (2018) observed classroom practices that deviated from this principle, where large groups of students evaluated each other's oral presentations after being taught a peer assessment model. This instance deviated from the core principles of peer assessment because student evaluation directly affected pupils' grades. While the literature asserts that formative assessment generates feedback capable of improving instruction and student learning (Black & Wiliam, 1998; DeLuca et al., 2018; Hwang & Chang, 2021), there is less consensus about how students interact during peer assessment. Early literature claims that students are honest and reliable in assessing themselves once they have a clear picture of how to conduct effective peer assessment through teacher-facilitated scaffolding processes (Black & Wiliam, 1998). Less information is provided, however, about how students interact with each other after receiving direct instruction about how to peer assess through teacher modelling and shared group practice.

#### **Types of Effective Feedback**

More recent literature on peer assessment explores factors outside of explicit instruction from teachers, while also leaving additional room for examining student interactions with greater depth. For instance, the timing and type of feedback matter in order to help students improve the outcomes of the learning process. Peer assessment activities that directly address core feedback questions, such as "Where am I going?", "How am I going?" and "Where to next?" (Hattie & Timperley, 2007, p.102), can have positive effects on self-reflection and learning because they produce task, process and self-regulatory feedback. These types of feedback are beneficial as they lead "learners to deeper task engagement and understanding" (Cheng et al., 2015, p. 82). Inversely, personal feedback, such as "you are a good student", is not beneficial for improving student outcomes because it is not connected to a task.

Student perceptions also can affect how peer assessment is conducted: while junior students in grades four to six generally might have a positive outlook on peer assessment, assessment for learning processes need to be implemented over time to be effective in the upper grades as they are "learned behaviours" (DeLuca et al, 2018, p. 91). This is not to suggest, however, that older students hold more negative perceptions

about peer assessment; instead, older students are better able to utilize peer assessment if they previously had meaningful practice with it at younger grades.

#### **Metacognition (Learning Peer Assessment)**

Peer assessment can also be valuable on a metacognitive level even when the feedback students provide each other is not high-quality. This is because it increases student awareness of the potential quality gaps within their own work as they continue to self-evaluate over time (Hwang et al, 2014). With that said, metacognitive feedback remains secondary in improving learning output compared to task-based feedback (Cheng et al., 2015). While students are able to develop an awareness of their work over time, this is fostered through giving and receiving feedback that is targeted towards specific work samples. As students develop greater metacognition of the assessment process, this enables them to develop greater proficiency in using peer assessment in subsequent situations.

## **Social Dynamics in Peer Assessment**

Three notable areas where social dynamics affect peer assessment include social hierarchies, student-to-student competition, and gaps in reading and writing abilities between students that are peer assessing each other's work. Although classrooms in elementary schools use language centred around teamwork and community to try to mitigate the effects of these dynamics, they do not actually create a level playing field. Crossouard (2012) notes that community-focused language does little to address the differences students experience socially on conscious and subconscious levels. As such, Crossouard challenges teachers to directly address these social inequities with their students by using conflict situations as contexts of social learning. With that said, teachers choosing to stick with a conventional teamwork rhetoric approach would still benefit from an increased understanding of student interactions during peer assessment, as peer-to-peer perceptions shape students' learning experiences.

Tenório et al. (2016) note that social tensions can increase in school environments where students are part of a competitive culture and, as a result, negatively affect peer assessment activities through reduced motivation and engagement when students perceive a noticeable skill gap between themselves and

their peers. Bryant (2010) observes, however, that students with lower proficiency in reading and writing show high engagement when receiving feedback from students they perceive as experts, even if that feedback is difficult for them to implement within their own work. Inversely, if a student perceives that their peer assessor is lower in skill than they are, they feel that they will not benefit from peer assessment activity.

## **Addressing Gaps in the Literature**

In summation, while the academic and metacognitive benefits of peer assessment have been identified, there is less consensus regarding the relationship between social dynamics and how they affect peer feedback. As such, there is potential for further exploration of the actual responses and interactive behaviours that students provide during peer assessment activities (DeLuca et al, 2018; Hwang et al., 2014). As a result, I conducted primary research that observed, recorded, and analyzed these interactions as a means to directly address these gaps in the literature.

# Methodology

When developing my methodology, I had to consider elements such as: the best approach for my research sample and context, ethical procedures, data collection, data analysis and how my own personal factors could affect my research.

#### **Qualitative Research Rationale**

I examined student interactions to better understand students' behaviours and address the questions "What do students say they understand about the process of peer assessment?" and "What social dynamics do I observe, as my students' classroom teacher, during peer assessment?" As a result, my research approach and data analysis took a qualitative approach in an effort to achieve this understanding. With this in mind, the peer feedback that students generated functioned as my unit of analysis, with the students themselves acting as my unit of observation. When formulating my research questions, I reflected on how a qualitative research design would be a better fit for my situation than a quantitative research design, particularly as I was primarily interested in capturing the experiences of my participants rather than using my understanding of

general data to try to explain or rationalize those experiences through deductive reasoning. Research challenges I recognized I would potentially face included time and resource limitations within the context of this MEd program, my own skill limitations in conducting research, and the limitations of using an availability sample from a class of 28 students for quantitative research, in the event that I chose to do quantitative research instead of qualitative (DeCarlo et al, 2021).

## **Research Sample and Context**

My research was geared towards peer assessment practices at the upper elementary level, as I am a teacher of students in grades four to seven, and I wish to continue working with this age group during my career. I structured my proposal around the class that I taught for the 2022-2023 academic year. From January to June 2023, I taught a split grade six and seven class of twenty-eight students at a public school within a school district in BC.

#### **Ethical Conduct**

As the research participants for this study were minors aged eleven to thirteen, parent consent and student assent were needed for this study. I sent consent and assent documents expressing the purpose of this study to students' parents or guardians in my classroom community. Parents and student participants had the right to withdraw at any time, and data confidentiality was protected throughout the process as collected data was only stored on my password-protected laptop. This data was only accessed by me on my private network located in my home residence, as well as the Simon Fraser University network while working on the project on campus. The data will be subsequently deleted five years after completion of the research in August of 2028. While reporting focused on general trends from the data analysis, subsequent reports shared with the stakeholder community used pseudonyms when discussing findings from individual students.

Parents and student participants were also notified about how their data would be handled if they chose to withdraw. As peer assessment is part of regular classroom instructional time, students not participating in the study still completed the mind-mapping activities, peer feedback response page and post-peer feedback reflection

form. Their responses, however, were not collected for data analysis. Should a student have withdrawn from the study, their peer feedback responses would be removed from the data set. Furthermore, no direct mention would be made of withdrawn students or their comments about reporting the findings from the mind mapping.

As part of the mind-mapping step was intended to trigger potential discussion of social dynamics as they relate to peer assessment challenges, I took care during preteaching prior to mind mapping to not explicitly point out areas of potential stigmatization including differences between students in terms of academic ability, socio-economic position, race, religion or gender expression. With that said, as the mind-mapping process was an open verbal and written discussion between students, these elements could have potentially arisen. Resource personnel including the homeroom teacher, school support staff and counselling services were made available at the school where I conducted my research should any students have needed to debrief any of the discussions that took place during the mind-mapping activity.

#### **Data Collection and Procedure Rationale**

Data collection of the peer assessment feedback responses was conducted alongside an in-class short story writing project designed to meet the standards of the BC curriculum for grades six and seven. As metacognitive strategies and writing processes are content standards within the BC curriculum from the start of kindergarten, I thought that many students would have experience with peer assessment prior to grades six and seven. For example, students are familiar with activities like the commonly used star and a wish routine where students identify and share the strengths and weaknesses of a given piece of work. With that said, I also ensured that students had guided practice with the peer assessment process before the start of my research: after modelling how to give peer feedback to a writing piece according to a set of criteria, I gave students whole group practice in giving feedback to sample pieces of writing that met different levels of achievement.

After completing the pre-teaching and collecting the appropriate consent forms, I was able to formally begin the data collection process. In the interests of clarity, I have provided a bullet-point timeline of research tools as follows and I will explain the role of each tool in subsequent sections:

- Mind-Mapping Activity: Written Response (completed in groups of three to four students)
- Mind-Mapping Activity: Follow-up Discussion (completed as a whole class)
- Peer Feedback Response Page (completed in pairs)
- Post-Peer-Assessment Feedback Forms (completed individually)

Prior to engaging students in direct peer feedback regarding their written work, I facilitated student responses to peer-assessment-related questions through a group minding-mapping strategy to initiate students' exploration of the benefits and challenges of peer assessment. Each mind map had one of the following questions printed in the centre of a letter-sized page: "What does peer feedback mean to you?", "What might the benefits be when giving peer feedback to other students?", and "What might the challenges be when giving peer feedback to other students?" Students completed these mind maps by writing down their own responses to each question in groups of three to four students, and were grouped according to whether or not they had consent to be in the research study. After these initial responses, students had an opportunity to engage with their peers' written responses by writing direct responses to their peers on the mind map. After each group member had a chance to read through all of the responses on their mind map, each group verbally discussed any of the trends or patterns they noticed with their group's thinking and shared those with the rest of the class.

I selected mind maps as the literature suggested that they are a more appropriate tool for collecting data than surveys or interviews. This is because they are less likely to be affected by researcher bias than other formats such as interviews or focus groups (Boon, 2016; Wheeldon, 2011). This is particularly the case when the researcher is the students' homeroom teacher that the students might be trying to please or get attention from. I also felt that mind maps were a good fit for my class as they allow students to engage with each other's thoughts directly after the initial teacher prompt, and, therefore, create opportunities for more student-to-student interaction, as opposed to student-to-teacher interaction.

The primary purpose of the mind maps was to assess students' metacognitive thinking about what they think peer assessment is, and how they think peer relationships affect their ability to give feedback. Furthermore, the coding of student responses to these questions allowed me to describe what the term peer feedback actually means to

students, and what kinds of benefits and challenges they are able to identify during the peer assessment process. For instance, I was curious about whether students would only be able to define peer assessment in very broad terms, or if they would be able to reference specific strategies previously acquired at school. In addition, could students identify the general benefits or challenges inherent to most social settings, or would they be able to identify specific behaviours that clearly show nuanced social relationships or power dynamics during the peer assessment process? While the mind-mapping activity was impacted by how much students wrote and who engaged with the writing, these impacts were mitigated by the subsequent response pages being completed individually.

With this in mind, student interactions, including those taking place while responding to a mind map, are affected by peer relations rooted in "social and gendered hierarchies" that impact how peer assessment activities unfold (Crossouard, 2012, p. 745). While a teamwork-oriented classroom environment can help students think of each other as peers, class relationships, differences in academic ability, culture and gender expression exist and take shape across classroom activities. The mind map was intended to assess awareness of any benefits or challenges that students may experience during the peer assessment process. While I was not explicit about power dynamics linked to social positioning, class, gender, ethnicity or culture, I was curious as to whether the students during the mind map process would choose to explore these elements.

After completing the small group section of the mind-mapping activity written response, I facilitated a whole group discussion where students shared their findings and impressions. As a means to gather the most data possible, I facilitated class discussion through the following prompts and wrote down the subsequent student responses. These questions were generated from my own teaching experiences, synthesis of the literature and alignment with my other research tools including the peer feedback response page and the post-peer-assessment feedback forms. While these questions were not pilot tested, the research committee did preview them in advance of approving my research proposal.

- 1. What does peer feedback mean to you?
- What might the benefits be when giving peer feedback to other students?

- 3. What might the challenges be when giving peer feedback to other students?
- 4. How could we deal with the challenges of peer assessment?
- 5. How might it feel to receive peer feedback?
- 6. How might it feel to give peer feedback?
- 7. If you and your partner have different writing skills, how might that affect your feedback?
- 8. How might giving and receiving feedback feel if you're friends with the person?
- 9. How might giving and receiving feedback feel if you don't know the person as well?

After this discussion, I grouped students into pairs (except for a single group of three). Grouping criteria included students' abilities to work with each other cooperatively and who had consented to be in the study. In a later lesson, these students then peer assessed each other's short stories which were linked to our current writing unit. While working in groups of three students or more which allowed multiple students to assess each piece of work might have been beneficial, I was cognizant of how much stamina grade six and seven children have before they reach peer assessment fatigue and are wanting to move on to another task. With these stamina limitations in mind, I did not employ the systems referenced in the literature where three or more students will assess the same piece of work multiple times.

The peer feedback response page that students used during peer assessment is informed by Boon's (2016) four steps to increasing the application of peer feedback generated between students in elementary school settings. According to Boon (2016), educators should: first, ensure the initial feedback is effectively linked to how work can be improved (feedback initiation); second, give students time to verbally clarify any potential misunderstandings about their feedback (feedback clarification); third, give time for students to put feedback from peers into action (feedback implementation), and, lastly, conduct teacher follow up with students regarding how they have applied feedback from their peers in their writing (feedback reflection). Going forward, I will address these four steps as the peer feedback cycle, alongside the keywords I have provided for each step.

With the peer feedback cycle in mind, the peer feedback response page included the following questions: "What parts of your writing did your partner celebrate? What suggestions did your partner make about improving your work? Which of these suggestions will you focus on, and why? What suggestions did you actually use from your partner to improve your work, and why?" As feedback that is strictly critical in nature can create anxiety for some students, the first question was intended to generate positive praise to help ease students into the activity, as well as clarify what areas of strength students demonstrated. The second, third and fourth questions all apply to a different step in the peer feedback cycle. The second question, "What suggestions did your partner make about improving your work?" was completed during the peer feedback initiation and clarification processes. The third question, "Which of these suggestions will you focus on, and why?" was completed after the feedback initiation and clarification steps as students needed time to consider their partner feedback before applying it to their writing during the feedback implementation phase. The fourth question, "What suggestions did you actually use from your partner to improve your work, and why?" were completed during the feedback reflection phase after feedback implementation has taken place. Note that the question "What suggestions did your partner make about improving your work?" addressed both the feedback initiation and clarification steps as they occurred at roughly the same time. Furthermore, fewer steps were included to make the peer feedback cycle more accessible to grade six and seven students.

As students having a space to reflect on the social components of the peer assessment process was vital to this study, I asked students for their feedback through a post-peer-assessment reflection form that was completed individually. This form posed the following questions:

- 1) What was it like to have to give feedback to another student?
- 2) What was it like to have received feedback from another student?
- 3) How effective did you feel as an evaluator?
- 4) How valuable did you feel your partner's feedback was?
- 5) How might your relationship with your partner have affected peer feedback?

The intention of these questions was to generate personal responses from students that build on their thinking from the mind-mapping activity written response while also affording more opportunities for personal voice. In addition, the post-peer-assessment reflection form may be able to catch shifts in thinking that students experience after having freshly completed the peer assessment process with a classmate.

Although I intended to take notes in a reflexive journal to supplement student responses during the peer assessment feedback page step, the use of a reflexive journal during this step was limited by classroom factors outside the realm of my research, such as helping students in need with various unforeseen school situations. Having said this, I was able to observe students in the days and weeks after completing the peer assessment feedback page and noted any changes in peer interactions or friendship dynamics. No major changes in friendships occurred as a result of students conducting peer assessment.

#### **Data Analysis**

My qualitative research followed a linear design: data analysis was conducted after all available student responses were collected from the in-class activities and recorded into a data table that linked research prompts and student responses. Prior to entering all of this data into the data tables, I recorded my predictions for my possible findings so that I would be able to later reflect on how the themes in the data might differ from my preconceptions, and also check in with myself regarding any biases I might hold prior to data cleaning and analysis.

In response to "What do students say they understand about the process of peer assessment?", I predicted the following: students are able to identify peer assessment as a useful strategy for learning from their peers and improving their work. Students can identify different forms of peer assessment, but their knowledge about the strategies and outcomes of peer assessment will lack depth as they will be limited to items and ideas on the surface level. In short, students can identify and provide a brief description of peer assessment, but they are not yet masters of using and evaluating peer assessment practices.

Furthermore, in response to "What social dynamics do I observe, as my students' classroom teacher, during peer assessment?" I noted that after the mind-mapping process, but before the peer editing process, students verbally expressed hesitancy in using peer feedback with classmates. This is because they believed that giving negative feedback (however honest, constructive or well-intentioned) could be seen as detrimental to maintaining friendships and building positive peer relations with other students. As a result, I predicted that this tendency would have a significant impact on peer assessment interactions. Having said this, I also anticipated that not all feedback will show this hesitancy, as students might be more honest when doing peer assessment as opposed to thinking about it and discussing it in a group setting where it is socially advantageous to appear thoughtful about the feelings of others.

In addition to student relationship factors, I predicted that interactions between students will also be impacted by gaps in descriptive language skills (both verbal and written), student comprehension of story writing skills, academic ability, as well as interest and investment in the peer assessment tasks. With this in mind, I anticipated that students would choose their relationship well-being over giving honest feedback (although this would certainly vary from student to student). The inverse, however, may also occur when a student does not see themself as having or developing a positive relationship with their peer assessment partner. In this situation, students may offer more blunt or honest feedback, and in extreme cases may use peer assessment to put down or assert dominance over their peer assessment partner.

Having taken stock of my prior assumptions, I was ready to transfer all of my raw data from the mind-mapping activities, peer feedback response page and post-peer feedback reflection form into four data tables, one for each of the following steps: the mind-mapping activity written response, the follow-up discussion, the peer feedback response page and the post-peer feedback reflection form. For each table, I sorted student responses into rows and my question prompts into columns. I created a pseudonym for each student and linked student names with their pseudonyms in a separate table while also ensuring that I recorded student data in subsequent tables according to pseudonyms, not real names.

For reference, I have included a full list of prompts that I asked students throughout the research project as follows. I have also included my data tables in Appendix A of this paper.

- 1. What does peer feedback mean to you?
- 2. What might the benefits be when giving peer feedback to other students?
- 3. What might the challenges be when giving peer feedback to other students?
- 4. How could we deal with the challenges of peer assessment?
- 5. How might it feel to receive peer feedback?
- 6. How might it feel to give peer feedback?
- 7. If you and your partner have different writing skills, how might that affect your feedback?
- 8. How might giving and receiving feedback feel if you're friends with the person?
- 9. How might giving and receiving feedback feel if you don't know the person as well?
- 10. What parts of your writing did your partner celebrate?
- 11. What suggestions did your partner make about improving your work?
- 12. Which of these suggestions will you focus on, and why?
- 13. What suggestions did you actually use from your partner to improve your work, and why?
- 14. What it was like to have to give feedback to another student?
- 15. What was it like to have received feedback from another student?
- 16. How effective did you feel as an evaluator?
- 17. How valuable did you feel your partner's feedback was?
- 18. How might your relationship with your partner have affected peer feedback?

Questions one to three formed the columns of my mind-mapping activity written response data table; questions one to nine formed the columns of my follow-up

discussion data table (with questions one to three being repeated as some questions had additional ideas to add not present in the first round of mind mapping); questions ten to thirteen formed the columns of my peer feedback response page data table, and questions fourteen to eighteen formed the columns my post-peer feedback reflection form data table. Contrary to the subsequent tables, the mind-mapping activity written response table is organized into rows based on student groups, not individual students. This is because students in each group responded to this step simultaneously and I am unable to reliably discern each student's response based on their handwriting.

Given that my research questions were a response to the lack of consensus regarding how students interact with one another during peer assessment, I used a general inductive approach (Thomas, 2006) to analyze my data after completing the data cleaning step. This was a good fit because this approach "primarily (uses) detailed readings of raw data to derive concepts, themes or a model through interpretations made from the raw data by an evaluator or researcher" (p. 238), and thus facilitated my broader understanding of student experiences during peer assessment activities using the specific ideas presented in my collected data. Furthermore, while the general inductive approach was influenced by my research questions and objectives, my findings arose directly from data analysis, "not from a priori expectations or models" (p. 239). In addition, as I was not testing a particular hypothesis and was aiming to primarily illustrate my students' experiences this allowed data analysis categories to naturally emerge after initial data cleaning processes took place. Data coding allowed me to start linking data text samples to theme categories, as well as link these theme categories to each other.

## Reflexivity

As a means to establish reflexivity, I wish to identify elements that might bias the findings that I glean from my data analysis. During my time teaching in China and Japan, I worked with students that were transitioning from a competition-driven mindset in local school settings to a growth mindset in an international school setting. Many of these students struggled with getting to grips with the intentions and processes of peer assessment as it represented a Western view of teaching that clashed with some of the Eastern family values at home. Given that many of these Eastern families prioritized academic success within a competitive environment, some of my students would find it

difficult to exchange feedback with their peers in a supportive or useful way as they would focus on comparing themselves to their peers rather than learning from them. Alternatively, they may have disregarded the peer feedback process as they felt that learning suggestions could only come from teachers, not students. As a result, I may be biased in my thinking that certain students may be less likely to click with peer assessment if they are motivated by competitive pressures at home.

# **Findings**

As previously alluded to, data for this research was triangulated from the following tools: the mind-mapping activity written response, the mind-mapping activity follow-up discussion, the peer feedback response page, and the post-peer-assessment feedback forms. These tools work together to form a more detailed data picture as they capture students' thinking prior to, during and after peer assessment. More specifically, the mind-mapping activity written response and follow-up discussion enable students to share their preconceptions and potential concerns about peer assessment; the peer feedback response page captures their thoughts during the process of peer assessment, and the post-peer-assessment feedback form allows students to reflect upon how the peer assessment process went for them, as well as share any new insights and compare those to their initial preconceptions or concerns. Capturing student voices in this manner provides insight into both what students know about peer assessment as well as how they experience social dynamics during peer assessment. As a result, these tools are an ideal fit for answering my core research questions.

Upon completion of data analysis, the following themes emerged from the data: assessment process, positive perceptions, constructive use, limitations, social implications, evaluator positioning, mutual comprehension, and ease of sharing feedback. In the following sections, I will elucidate how the data facilitated the emergence of these themes.

## **Assessment Process: Findings**

Regarding my first theme, the assessment process, the data shares students' connections about how they give and receive feedback during peer assessment. This data primarily emerged during the mind-mapping step, where students phrased these

connections in a neutral, non-opinionated way. This includes "Peer feedback means you got [a] mark by a peer or a classmate and they give some feedback and comment to you". Student data in this category includes keywords such as "give", "get", "tell", "comments", "feedback" and "marks" as students connect to these terms without attempting to separate them. Furthermore, statements such as "A peer telling you how they feel about your work" connect feedback with subjective elements such as feelings. Data connections also include "Giving and getting feedback from different people" which implies students' awareness that the peer feedback process can include multiple evaluators.

#### **Assessment Process: Discussion**

While appearing simplistic at the outset, comments such as "Peer feedback means you [get a] mark by a peer or a classmate" raise questions about how students might distinguish feedback and formal grades. While the literature suggests that peer assessment is a formative assessment process, to what extent are students connecting these processes with summative assessments? This observation is salient as at no point during the pre-teaching phase did I explicitly connect peer assessments with students assigning each other formal grades. I used keywords such as feedback and suggestions in favour of marks and grades when describing the peer assessment process to students. As such, I am curious as to why students are blending these terms together. Are students making these connections because they heavily equate feedback with grades? If so, to what extent have they truly internalized peer assessment as a learned behaviour at the grade six and seven level? Furthermore, what classroom practices can help students with understanding the distinction between formative feedback and summative grades? Answers to these questions will be relevant when developing practice and policy fosters effective peer assessment cultures within classroom and school settings.

## **Positive Perceptions: Findings**

Students included additional descriptions of peer assessment in the next theme, positive perceptions. Statements linked to this theme described peer assessment as a positive, constructive process. Furthermore, during the mind-mapping activity written response

and follow-up discussion, students alluded to the possible benefits of peer assessment with statements such as: "Peer feedback is a good way to help others while getting more ideas for yourself and using those ideas to make your work better", "You can improve your project" and "Seeing [other's ways] of learning (can) help you". Most of these comments, however, did not reference specific actions that students receiving feedback could take beyond simply "(building) on your work" by making improvements; comments regarding specific actions were connected with the theme of constructive use.

Although student responses during the mind-mapping activity written response and follow-up discussion lacked apparent depth, many students maintained that peer assessment was beneficial during the post-peer assessment reflection form as both evaluators and evaluatees. When commenting on the process of giving feedback, statements included: "It felt good" and it was "[Pretty] good (because the partners) are open to (getting) the feedback" that the evaluator shared. In terms of receiving feedback, many students described the process as positive as noted by "It was nice (because) I can know what I can improve" and "It made me realize mistakes that I wouldn't have known". Comments about evaluating work and being evaluated resonated in similar ways. For example, one evaluator shared that they "felt good because (they) can look at what people wrote in their stories and give them suggestions to improve", whereas another said that "I felt pretty effective because Naoto appreciated my feedback". The latter statement appears particularly positive as the evaluator described the evaluatee's positive experience. Inversely, evaluatees also had positive comments to share about their experiences: some claimed that the evaluation process "was pretty valuable as I was able to fix some errors and make my writing better"; furthermore, peer assessment "was helpful (because) there were some formatting problems I fixed".

#### **Positive Perceptions: Discussion**

While students can extol the perceived benefits of peer assessment, their potentially limited ability to describe peer assessment beyond its surface-level benefits could illuminate how well students truly understand these processes. In addition, surface-level responses potentially reveal limitations of the data collection methods, as they appear less likely to invite deeper, more fleshed out responses. Thinking ahead to our next theme, more specific actions emerged in the data through the theme constructive use.

# **Constructive Use: Findings**

Students managed to reflect upon specific actions they could take to improve their work based on comments from their evaluators. Data falling in the category of constructive use includes student comments such as: "I will fix my grammar by checking for punctuation and capitalization", "I [built] my characters because I really think that it needed to be done", I will "(change) the ending and make it more [detailed]", and "I [will] add more dialogue because [adding] more [dialogue] will be more interesting".

#### **Constructive Use: Discussion**

Of particular note, while students reference specific features that they could improve upon such as fixing grammar, developing characters, adjusting endings and adding dialogue, these descriptions still have room for greater specifics and depth. There are two primary reasons for this: firstly, students might not have the technical knowledge to express deeper specifics during the peer assessment process; second, students might have been experiencing fatigue with peer assessment routines (including having to explain those routines to their teacher after completing them), which in turn might have limited their output on the peer feedback response page.

Furthermore, with these two reasons in mind, students' inability to identify more specific details in their follow-up actions from peer feedback once again raises questions about how effectively students can apply peer assessment as a learned behaviour. For example, if students struggle to improve their work after peer assessment activities, how can teachers help students fully realize their best work in their assignments and other forms of learning evidence?

# **Limitations: Findings**

Alongside student perceptions of how peer assessment might be positive, and the specific actions they might take to improve their work, students also shared ways in which peer assessment might be limited. Under the theme of limitations, I discovered comments written during the mind-mapping activity written response such as peer assessment is a "(complicated) way of getting assessed" that has "(no) benefits". Furthermore, on the peer feedback response page, one student noted that she didn't

use any of her partner's feedback as she felt that her "story already made sense". On the post-peer-assessment reflection form, one student shared that while feedback was helpful "it would have been faster, and just as helpful[,] if I marked my own" work, particularly as the points students offer to each other can cause a "debate [about] why or why not (students get the mark)". Another student said that the evaluation process went poorly "because my partner didn't give me any feedback".

#### **Limitations: Discussion**

Students describing peer assessment as having limited benefits could stem from a range of reasons. While the subsequent themes of social implications and evaluator positioning will explore how peer assessment is affected by students' social world, students describing peer assessment as having no benefits indicate that they may lack positive experiences with using peer assessment. This lack of experience could reflect factors such as the following: students' inability to identify and describe what can be improved within a given piece of work, students' misunderstanding of what effective peer assessment looks like, or students' general lack of effective practice in using peer assessment. Student commentary suggesting that their work was already good enough reflects the original student author's lack of desire or ability to identify and develop ways to iterate upon their own work. Lastly, data suggesting that, while peer assessment can be effective, it is easier for students to individually evaluate and improve their own work without the help of a peer illustrates that students might not agree with the perspectives of their evaluators or feel that their evaluators are competent enough to actually offer actionable feedback. The latter concept demonstrates that students need to understand each other and their respective work for peer assessment to properly function, and will be explored in the theme of mutual comprehension.

In addition to the limitations that students explicitly stated themselves, there are additional limitations that students are expressing, albeit indirectly. This is because students were sharing their thoughts during class time with their peers and myself, the researcher and their classroom teacher. As such, one cannot ignore that perceived expectations concerning different interactions could potentially influence student responses. As such, it is difficult to separate students' genuine opinions about peer assessment from their desire to appear socially acceptable through a "good student" persona or set of attitudes. Data from the peer feedback response page that suggests

such attitudes may have shaped students' responses include: "I used all the suggestions, because I want to make my work the best it can be" and "I improved my grammar because I listen to suggestions." A similar response was extracted from the post-peer-assessment reflection form where a student stated, "It was OK because I can receive all types of 'ideas'." These comments are salient because actions such as using suggestions, striving to make work the best it can be, listening to suggestions and being open to ideas are actions that students would try to take regardless of the quality of feedback provided by the evaluator. Therefore, students would want to be seen to adopt these actions, irrespective of whether or not they had actually internalized the desired good-student behaviours. As a result, understanding peer assessment requires not only a more nuanced understanding of the data, but a deeper understanding of the social worlds in which that data is rooted. These connections will be explored in the next two themes, mutual comprehension and social implications.

#### **Mutual Comprehension: Findings**

Finding multiple data segments about the positive and negative elements of the peer assessment process piqued my curiosity about how well students were understanding the feedback as evaluators and evaluatees. With this in mind, I wish to unpack my findings regarding mutual comprehension. For the peer feedback cycle to take place, evaluators have to be able to understand the evaluatee's content well enough to be able to give feedback on it. Data during the mind-mapping activity written response and follow-up discussion that revealed why this might be tricky for some students included: students not being able to give feedback because the "presentation/project is too perfect", nor being able to receive feedback when the evaluator was "too smart", therefore making the feedback too sophisticated for the evaluatee to put into motion, especially when the evaluatee "might not understand what the feedback is asking (them) what to do". Students also mentioned their concerns about feedback that is too basic, or even detrimental, for the evaluatee. Examples included "offering poor feedback" that makes the evaluatee's writing worse, or offering undeserved positive feedback because the evaluatee's errors are not discernible to the evaluator.

## **Mutual Comprehension: Discussion**

Student concerns about feedback quality and the extent to which it is understood are also impacted by student relationships, particularly around perceptions of who is seen as smart and who is seen as not. Students perceived as smart might be credited with offering great feedback, even if it is irrelevant or nonsensical given the task at hand. On the other hand, a student seen as academically weaker or socially less accepted might have their feedback discredited, even if it is appropriate or of high quality given the task at hand.

## **Social Implications: Findings**

The data I acquired from student feedback and reflection provides insight into their understanding of the peer assessment process; this, however, only addresses my first research question: "What do students say they understand about the process of peer assessment?" To address the second question, "What social dynamics do I observe, as my students' classroom teacher, during peer assessment?", I will examine my next theme, social implications. In this category, students described concerns with peer assessment and how it can impact social relationships between students through issues in feedback quality, honesty and academic or social gaps between students. As students were (quite literally) socially invested in their responses, it is worth breaking down key responses from the mind-mapping activities, peer feedback response pages and postpeer-assessment feedback forms for this theme. During the mind-mapping activity written response and subsequent discussion, students had a lot to share about "what might the challenges be when giving peer feedback to other students?" Students voiced ideas such as: "People might not listen to your feedback"; "Not being able to agree (about the feedback is) even worse if they are your friend"; "If you have to mark your friend's work wrong, they might feel like you think you're better or smarter than them"; "It might be hard to tell some improvements to your peers because they might get mad at you"; "If someone is mad at you they can give you bad marks"; "You might (be) afraid that if you [give] bad feedback to them, them might not want to be [friends] with you anymore" and "You might be giving your friends better feedback than they deserve." The student data evidences various ways that students foresee social relationships impacting peer assessment and vice-versa, particularly as multiple data segments showcase

anxiety around how negative peer assessment interactions could potentially impact peer relationships.

During the follow-up discussion, students shared ideas that might help to mitigate some of these challenges. Suggestions included: "Think about your feedback before you share. Make sure you are saying something constructive, and not personal.", "Before marking, tell them that you will be honest with them." and "Be honest with each other." In terms of actually giving peer feedback, students shared that they'd likely be conflicted in trying to be honest with their partners while also not disappointing them. One student expressed why this balance might be difficult: You might feel conflicted because "you don't want them to feel bad or mad, (but even) if you're giving good feedback your friend might think that genuinely you're only doing that because you're friends."

At this juncture, I was curious about what the data would tell me about how students' actual peer assessment experiences in my classroom would reflect these concerns. On the post-peer-assessment reflection form, students shared reflections such as: peer assessment "was okay because I didn't want to disappoint Naoto but it was also fun.", "It felt good because me and Robin aren't very close but if it was Lucca it would be 'harder'.", "[So-so], because Marisa is my friend and if I [gave her a so-so] mark [I would be worried about] what would she think of me.", "If you are their friends, you won't want to hurt their [feelings] so you will say 'it's good' instead of some (honest) feedback.", "If it's Lucca I know I can be honest but if it was (an academically lower student) I don't know how (they) will feel." From these data segments, we're able to observe that students were able to carry out peer assessments with their partners. Furthermore, while the experiences range from "okay" to "fun", most of the data that expressed anxiety or worry was related to potential partners that these students weren't paired up with, rather than the individuals that they were paired up with.

## **Social Implications: Discussion**

When comparing data from before and after peer assessment, the peer assessment experience was not as challenging as students worried it might be. Based on my in-class observations, it didn't appear that any friendships were ended over the peer assessment activity or that social tensions skyrocketed due to students giving each other feedback. If nothing else, the prompts that students responded to throughout the peer assessment

process showcased their feelings of uncertainty and potential anxiety around the process. As such, data linked to social implications makes a strong case that the students with which I conducted the research had not yet internalized peer assessment as a learned behaviour. This is because the students appeared more immersed in thinking about the social effects of peer assessment, rather than demonstrating their full ability to use peer assessment to meaningfully enhance the quality of their work.

While one might argue that students in this group would naturally be more invested in their social realities instead of teacher-driven assessment tasks, data demonstrating that the process was not as bad as students may have envisioned presents the possibility that feelings of uncertainty or potential anxiety would decrease if students had had more practice with peer assessment. While individual student-to-student relationships will each have their own social dynamics, and certain combinations of young learners will present different tensions, I am, nevertheless, curious about the impacts of additional practice on this group of students. To gain a deeper sense of how students felt when giving and receiving feedback, I will share my next theme, the ease of sharing feedback.

#### **Ease of Sharing Feedback: Findings**

The gap between how students felt as evaluators and evaluatees is the core of my next theme, the ease of sharing feedback. Student data that connects to this theme includes the following. When giving feedback, a student said, "It was awkward. I don't really like it, but I don't mind." When that same student received feedback they expressed "It was neutral." When having to comment on how effective they felt as an evaluator, one student shared that they felt "Not very effective", whereas that same student said that their partner's feedback was "Medium effective". This theme closely connects to the data on social implications, as not only do students appear to find it is easier to receive feedback than to give it, but they seem to describe their partners as the better evaluators. Although students shared this, I did my best, as the classroom teacher and researcher, to partner students of similar skill levels so that both students would understand and be able to build off of each other's writing.

## **Ease of Sharing Feedback: Discussion**

Students' self-evaluation being lower than the perceived skill of their peers could be interpreted in three major ways: firstly, students might have actually experienced a skill gap between them and their partner; second, social tensions and concerns about student relationships might have triggered lower self-appraisals, or, third, students may have experienced a blend of the two previous categories. Regardless of which interpretation is the most accurate for the data, social gaps that are either real or perceived definitely have an impact on peer assessment.

## **Evaluator Positioning: Findings**

These peer assessment tensions between partner skill and feelings of social risk segue into my final theme, evaluator positioning. This final category consists of data where students describe why a neutral evaluator, who is not someone they are close with such as a friend, enemy, or rival, might be a better evaluator than someone who they are close with. Statements that express this theme include the following mentioned during the mind-mapping activity follow-up discussion: "If you get good feedback from someone who's not your friend, then you know they're being honest, which feels good." This sentiment is reflected in responses to the question "How might your relationship with your partner have affected peer feedback?", which were generated from the post-peer assessment reflection form. Responses include: "I don't know them, so I (was) honest.", "It [doesn't] affect anything.", "It wouldn't have affected anything because we are neutral to each other.", "I don't think it was affected because I was honest.", "It wouldn't have (had an impact). I would have given the exact same feedback to a stranger." With these data segments, we can also see a pattern where students express honesty as a possible means to being or becoming neutral evaluators.

## **Evaluator Positioning: Discussion**

Clearly, the actual neutrality or fairness of an evaluator involves a complex set of criteria that students may or may not be fully aware of. Having said this, it is questionable to what extent students' understanding of perceived neutrality and fairness align with actual neutrality and fairness, particularly as neutrality and fairness, while related, are different concepts that do not fully overlap each other. After all, an evaluator that lacks a close

relationship to the evaluatee is by no means going to offer optimal feedback because they hold a neutral opinion of the person's work that they are evaluating. Factors that could impact neutrality include: first impressions of the evaluatee's personality, initial impression of the evaluatee's work, the evaluator's understanding of the task as well as the evaluator's understanding of what good feedback looks like.

On the flipside, the evaluator and evaluatee having a closer positive or negative relationship might not impact fairness in peer assessment as dramatically as students originally predicted. As was the case with the data related to "ease of feedback", receiving feedback was easier than students thought it would be, especially in regards to student responses about friendships ending because of negative feedback; simply put, this never actually happened. Even in situations where students have animosity towards each other, they are not guaranteed to express this during peer assessment if they both have a strong understanding of the assessment criteria and can identify and create good feedback. Furthermore, teachers are likely to have a good grasp of social dynamics in terms of who works well with who and are unlikely to set up students for failure with poor peer assessment group combinations.

Nevertheless, student perceptions of how their peers might embody neutrality and fairness highlight how inextricable students' understanding of the peer assessment process is from the social dynamics that students experience in the classroom, and is essential to consider when revisiting the body of work shared in the literature review.

# **Discussion: Literature Revisited**

Upon reflecting on my findings, social implications and limitations emerged as dominant themes in the data, more so than the assessment process, positive perceptions, or constructive use. Evaluator positioning, mutual comprehension and ease of sharing feedback emerged as important themes which further expanded connections to social implications and limitations.

As such, I have learned to appreciate the irony embedded within my core research questions: "What do students say they understand about the process of peer assessment?" and "What social dynamics do I observe, as my students' classroom teacher, during peer assessment?" The irony is that the students with which I conducted

my research used their understanding of social dynamics to navigate perceived peer assessment situations first before actually carrying out the step-by-step procedures of peer assessment. Simply put, from a student perspective, the second research question preceded the first when undertaking peer assessment. This differed from my initial pattern of thinking as the researcher and teacher as I assumed that students would have greater comfort and confidence levels with using peer assessment, and be further along with mastering the process as they were close to finishing elementary school, and subsequently going to high school.

With this in mind, I wish to connect my findings to my literature review, as well as reflect upon any limitations within my methodology that might impact these connections. Crossouard's (2012) discussion of how classroom rhetoric centred around the importance of community and teamwork does little to improve classroom inequalities resonated with my data findings. This is because while community and teamwork are elements that are reinforced on both classroom-wide and school-wide levels for students at the school where I conducted my research, students still noted the presence of social hierarchy, friendship dynamics, and reading and writing gaps when conducting peer assessment. In addition, the manner by which students described these hierarchies and the associated social risks suggested that they would be better equipped to conduct peer assessment if they had had more practice prior to the start of the research. Simply put, positive classroom rhetoric did not counterbalance students' lack of practice with peer assessment.

Although one might argue that my data reveals more about students' thinking about social dynamics than about peer assessment itself, some salient points have, nevertheless, risen to the surface. Of particular note, connections in the literature that peer assessment is a "learned behaviour" that needs to be implemented over time in order to be successful with students in upper elementary grades resonates with my research findings (DeLuca et al, 2018, p. 91). The combination of student anxiety around peer relationships and the limited amount of specific feedback that emerged from the data makes a strong case that the students in the study have not mastered peer assessment as a learning process. Furthermore, the way I structured my research to place processes first and social dynamics second illustrates my prior assumptions that the students that I conducted my research with would have a greater understanding of peer assessment. Going forward, the discovery that not all grade six and seven students

have mastered peer assessment is invaluable as I further seek to understand and develop both peer assessment and general formative assessment practices within my classroom and school contexts.

Reflecting further on the literature, Black and Wiliam asserted that students are honest and reliable in assessing themselves once they have internalized how to carry out effective peer assessment procedures (1998). While my data does not refute students' ability to be honest or reliable, it does contextualize that honesty and reliability in terms of their peer relationships. The high level of social tension and awareness students displayed during the mind-mapping activities and post-peer assessment reflection form showed that student feedback was deeply rooted in perceptions of who their peer assessment partners were as fellow classmates. Furthermore, the emergence of the theme that neutral evaluators were potentially more honest and reliable demonstrates that both evaluators and evaluatees' preconceptions of their partners actively shape peer assessment, especially when students have not fully developed peer assessment as a learned behaviour.

On the other hand, findings that competitive cultures can undermine peer assessment activities were not replicable with my data, as competition between students was not a predominant theme that emerged (Tenório et al., 2016). This may be the case due to my small sample size as only twelve students consented to my study. As such, further research with a larger group of participants would be needed in order to examine how competition between students might affect peer assessment at the school where I conducted my research, or BC schools in general. In addition, I was also unable to obtain any direct connections to students' thinking in terms of how language, culture, ethnicity and gender expression might affect peer assessment. As was the case with examining competition between students, a larger study may be needed in order to engage with these dynamics in a meaningful way.

My study was also limited by the tools I used for data collection: while mind maps and similar tools might be less potentially affected by researcher bias than surveys or interviews (Boon 2016; Wheeldon, 2011), the students that participated in my study were still very aware that they were sharing information with their classroom teacher. Furthermore, based on how the themes emerged from my data, students might have been affected by a desire to appear socially acceptable during the data collection

process, and it is difficult to evaluate the extent to which this happened for each data segment. This trend has me curious as to how student responses might have changed if I was only acting as a researcher, and not the students' classroom teacher as well.

#### Conclusion

This study sought to explore what a group of twelve students in grades six and seven at a public school in BC had to say about their understanding of peer assessment, as well as to observe the social dynamics between those students during peer assessment activities. While the context in my classroom only tells a small part of the story, I would argue that that story is, nevertheless, a salient one. This is because students within our study placed their social relationships and need for connections with peers above the priorities of a teacher-guided peer assessment agenda. This is in large part because the students that took part in the research had not fully developed peer assessment as a learned behaviour.

Going forward, it is of paramount importance that all teachers, administrators, policymakers and stakeholders acknowledge that students need time and space to conduct purposeful practice with peer assessment so that they can skillfully use this process to improve their work and the work of their peers. As evidenced by this study, students with insufficient practice are more likely to engage with peer assessment procedures on a surface level. Although some of their feedback may have lacked depth, students were, nevertheless, deeply engaged in their social worlds and the perceived effects of their actions on said social worlds. Thinking from an inductive lens, increased practice in the primary grades would endow intermediate-aged students with greater proficiency in using peer assessment as a learned behaviour. As a result, students would be better equipped to confidently balance navigating peer dynamics and conducting peer assessment procedures, and, therefore, be better prepared to actually exchange in meaningful feedback.

In addition, school stakeholders should also recognize that intermediate-aged students can have a tendency to fixate on grades or marks, even in settings that only aim to produce and share formative feedback. Developing classroom or school-wide cultures that primarily place value on feedback first and grades second may empower

students to think more critically about how their work can be improved over time, as opposed to fixating on what score should be assigned to them.

In the event that educators are working with students that do not have mastery of peer assessment, then using knowledge of student-to-student dynamics when balancing peer assessment activities is key. Naturally, each classroom setting will present their own social nuances that educators will navigate as they best see fit. Having said this, understanding that students need to be able to comprehend each other's work in order to exchange meaningful feedback is crucial when creating peer assessment groups. Furthermore, understanding that student perceptions of who provides constructive, neutral or fair feedback can vary greatly from reality. As such, teachers will need to exercise their own discretion when pairing up different students. In some cases, pairing up classmates that are close can be useful when building students' familiarity with the peer assessment process. However, having students peer assess with those that are close in ability but not close socially can aid students in building confidence with unfamiliar pairings, and improve social flexibility as they start to master peer assessment. Regardless of the classroom context, in order to plan for purposeful learning experiences, educators must consider their students and their perceived social realities. After all, the students themselves will always account for this. We should too.

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## **Appendix A. Data Cleaning: Theme Table**

Label	Description	Text Evidence	Links and Additional Info
Process	The student describes the process of PA in such a way that is neutral, not opinionated	Mind Map + Discussion: What does peer feedback mean to you? "Peer feedback means you got mark by a peer or a classmate and they give some feedback and comment to you." "A peer's thought about my stuff/work" "A peer telling you how they feel about your work." "I think peer feedback mean giving/getting feedback to/from others" Arthur: Giving and getting feedback from different people Post-Peer-Assessment Reflection Form: How effective did you feel as an evaluator? "I felt confedent because I can tell people how 'I' feel about they're work."	Links with Positive Perceptions: students also included descriptions of PA there, too  Keywords: feedback, comments, marks ->  Future Question (FQ): To what extent are students separating feedback and grades? (or FA and SA)
Positive Perception	The student describes PA in a positive way, alluding to possible benefits that are either general or specific	Mind Map + Discussion:  What does peer feedback mean to you?  "It means more learning opportunities"  "It means something you can work better on next time."  "It means important opinions from different people."  "I think peer feedback means your friends/peers help you out by trying to give feedback to build on your work."  "Peer feedback is a good way to help others while getting more ideas for yourself and using those ideas to make your work better."  "What might the benefits be when giving peer feedback to other students?"  "Know what you do wrong"  "You can improve your project"  "Work harder next time"  "Different perspectives can help with more experiences"	Key words: PA, experiences, perspectives, helping, improvement, opinions, ideas  When discussing positive perceptions of PA, students mention improvement, helping each other and that PA is "good", but often only describe PA in surface-level terms

Label	Description	Text Evidence	Links and Additional Info
		"You can support your class and they will support you so everyone will have practice giving feedback and taking the feedback and improving your work."  "The benefits that giving peer feedback is both of the maybe is a friend so the students may accept the comment more than a teacher."  "You can get ideas to make your work better while you help others with making their work better."  "You get better feedback when you get multiple feedbacks"  "Getting others opinion"  "Seeing others way of learning to help you."  "You get multiple feedback so you get more different knowledge in different ways."  "People/Myself can learn more things from the feedback."  Lucca: Possible to improve on your own work, and help others improve as well.  How might it feel to receive peer feedback?  Lucca: Should feel grateful for getting feedback.  Arthur: If it's good (constructive feedback) then you can improve.  Post-Peer-Assessment Reflection Form:  What it was like to have to give feedback to another student?  "It was interesting since I heard someone elses POV"  "It was okay because I didn't want to dissapoint [Naoto] but it was also fun."  "It feel good. Because I like to help friends"  "pettery good, they are open to get the feedback"  "It felt good because me and (Robin) aren't very close but if it was (Lucca) it would be 'harder'."  What was it like to have received feedback from another student?  "It was nice I can know what I can improve."  "It was helpful, it made me realize mistakes that I wouldn't have known."  "It was helpful, it made me realize mistakes that I wouldn't have known."  "It was nice because I wanted to improve my work and [Naoto] was nice."  "It felt good. Because I can improve my skills."  "Is good, know how to get the good ending"  How effective did you feel as an evaluator?  "I felt confedent because I can tell people how 'I' feel about they're work."	Links with "Good Student Perception": based on the data, it's hard to separate students' true feelings about PA from their desire to appear socially acceptable through a "good student" persona or set of attitudes

Label	Description	Text Evidence	Links and Additional Info
		"I felt good because I can look at what people wrote in their stories and give them suggestions to improve."  "I think I did pretty well giving him [her] feedback"  "I felt pretty effective because [Naoto] appreciated my feedback."  "It feel good because I give him a really good feedback. I tell him to add more details in the story after."  "Is useful, because it can make the story longer and more fun to read."  "I feel like I was helpful, my partner say I was harsh but I think that made me more helpful."  How valuable did you feel your partner's feedback was?  "10/10. Her suggestions are very useful. I can work better on my spelling."  "It was pretty valuable as I was able to fix some errors and make my writing better."  "I felt it was valuble because now I know where to improve."  "It feel good because I can getting better in English."  "Is good, It can make me have a better ending than before."  "It was helpful, there were some formatting problems	Additional line
		I fixed."  "Very' valuable because it really does help me."  "Pretty valuable - because it is the part where I can grow and buid on more my knowledge."  How might your relationship with your partner have affected peer feedback?  "We are friend so the peer feedback is good"	

Label	Description	Text Evidence	Links and Additional Info
"Good Student" Perception	The student describes PA in a way that shows possible evidence of wanting to appear socially acceptable by presenting ideas that a conventiona I "good student" would have	Peer Feedback Response Page: What suggestions did you actually use from your partner to improve your work, and why? "I used all the suggestions, because I want to make my work the best it can be." "Grammar, I improved my grammar because I listen to suggestions." Post-Peer-Assessment Reflection Form: What was it like to have received feedback from another student? "It was OK because I can receive all types of 'ideas'." How valuable did you feel your partner's feedback was? "10/10. Her suggestions are very useful. I can work better on my spelling."	Links to Positive Perception: (See Positive Perception)
Fixing Specifics	Instances of students reporting that they used partner feedback to fix or improve elements of their writing during PA	Peer Feedback Response Page: What suggestions did your partner make about improving your work?  "I will make my story more descriptive by describing John"  "I will fix my grammar by checking for punctuation and capitalization" What suggestions did you actually use from your partner to improve your work, and why?  "Fixing the Grammar Mistakes"  "Grammar, I improved my grammar because I listen to suggestions."  "I builded my characters because I really think that it needed to be done."  "Change the ending and make it more detail"  "I add more dialogue because add more dialogues will be more interesting"  "making/adding more detail at the end and not just the beginning"  "I decided to change the title, and improve my spelling. I also explained the setting and the characters better."  "Put more details at the end of the story"  Post-Peer-Assessment Reflection Form: How valuable did you feel your partner's feedback was?	Keywords: "more details/ description", punctuation, capitalization, grammar, character development, (narrative) conclusions, spelling  When addressing specifics, students still use general terms -> details in Peer Feedback Response Page perhaps limited by the style of form/ fatigue with talking about PA?

Label	Description	Text Evidence	Links and Additional Info
		"10/10. Her suggestions are very useful. I can work better on my spelling."	
Limited benefits	The student describes PA in such a way that suggests it is not very useful, through examples such as feedback that is hard to use or the belief that PA is cumbersom e and unnecessar y, given the existence of teacher assessment and self-assessment	Mind Map + Discussion: Question #1: What does peer feedback mean to you? "Nothing." Complicated way of getting assessed" What might the benefits be when giving peer feedback to other students? "No benefits" "None" "What might the challenges be when giving peer feedback to other students?" Marisa: People might not agree with what your feedback is. If you and your partner have different writing skills, how might that affect your feedback? Marisa: (Handwriting example) - someone might give the same feedback over and over; it's tiring to hear it as the listener Peer Feedback Response Page: What suggestions did you actually use from your partner to improve your work, and why? "I didn't use any; the story already made sense." Post-Peer-Assessment Reflection Form: What it was like to have to give feedback to another student? "It was fine, but it would have been more efficient to just mark my own. The points you give to others usually causes a debate for why or why not they got the mark." What was it like to have received feedback from another student? "Bad because my partner didn't give me any feedback" "It was helpful, but it would have been faster, and just as helpful, but it would have been faster, and just as helpful, but it maked my own." How effective did you feel as an evaluator? "I feel like I was helpful, my partner say I was harsh but I think that made me more helpful."	Keywords: complicated form of assessment, no benefits, feedback disagreement, no need for feedback (eg. story already makes sense), unnecessary (self- assessment just as efficient)

Label	Description	Text Evidence	Links and Additional Info
Social Implications	Students describe concerns with PA and how it can impact social relationship s between students through issues in feedback quality, honesty and academic or social gaps between students	Mind Map + Discussion: "What might the challenges be when giving peer feedback to other students?" "If someone is mad at you they can give you bad marks." "It means your friends and classmates will see your work + marks" "If you have to mark your friend's work wrong, they might feel like you think you're better or smarter than them." "People might get mad at you" "Being honest" "It might be hard to tell some improvements to your peers because they might get mad at you." "You might afraid that if you got bad feedback to them, them might not want to be friend with you anymore." "You might be giving your friends better feedback than they deserve." People might not listen to you feedback" "You have to think about their feeling and giving feedback of their work." "Not being able to agree (even worse if they are your friend)" Bruce: If they're your friend, you might give them a better score than they deserve. Naya: There might be a difference in the marks that you give, and this difference might cause problems. Follow Up Discussion: How could we deal with the challenges of peer assessment? Arthur: Think about your feedback before you share. Make sure you are saying something constructive, and not personal. Marisa: Before marking, tell them that you will be nonest with them. Lucca: Be honest with each other How might it feel to give peer feedback? Lucca: Feel conflicted: you don't want them to feel bad or mad; if you're giving good feedback your friend might think that genuinely you're only doing that because you're friends. Arthur: Being able to be honest with new people might help with making friends.	Keywords: "bad marks", honesty, social standing, relationships, friendship (tension), disagreement, feelings, disappointment  Links to Limited Benefits and Positive Perceptions: students highlighted many ways in which social relationships could negatively impact peer assessment -> more data in this category was generated during the mindmap phase than the subsequent two forms (not sure if this is relevant because one activity set up the other) ->

Label	Description	Text Evidence	Links and Additional Info
		How might giving and receiving feedback feel if you don't know the person as well?  Lucca: You might not know them as well, so you're worried about disappointing them. (If you want to be friends with them, this might cost you your chance.)  Marisa: You might not know the expectations of the person who's being evaluated.  Post-Peer-Assessment Reflection Form:  What it was like to have to give feedback to another student?  "It was okay because I didn't want to dissapoint [Naoto] but it was also fun."  "It felt good because me and (Robin) aren't very close but if it was (Lucca) it would be 'harder'."  "So so, because [Marisa] is my friend and if I give soso mark what would she think of me."  What was it like to have received feedback from another student?  "Nervous and thinking about what would she give me."  How might your relationship with your partner have affected peer feedback?  "If you are their friends, you won't want to hurt their feeling so you will say 'it's good' instead of some feedback."  "If its (Lucca) I know I can be honest but if it was (an academically lower student) I don't know how (they) will feel."  "Well a little bit since friends will be in to more of the mark relation instead of just marking and giving back."	Was PA not as "bad" as students worried it would be, or are student responses to the teacher shaping how they present their ideas to the teacher? Based on my in-class observations, it didn't appear that any friendships were ended over the PA activity

Label	Description	Text Evidence	Links and Additional Info
Neutral = better	Students describe why a neutral evaluator, who is not someone you are close with (eg. friend, enemy or rival) might be a better evaluator than someone you are close with	Mind Map + Discussion: How might it feel to receive peer feedback? Naya: If you get good feedback from someone who's not your friend, then you know they're being honest, which feels good. Post-Peer-Assessment Reflection Form: What it was like to have to give feedback to another student? "It felt good because me and (Robin) aren't very close but if it was (Lucca) it would be 'harder'." How might your relationship with your partner have affected peer feedback? "I don't know them, so I will be honest." "It dosen't affect anything." "It wouldn't have affected anything because we are neutral to each other." "I don't think it was affected because I was honest." "It wouldn't have. I would have given the exact same feedback to a stranger."	Keywords: honest, neutral  Based on the data, social neutrality can promote honesty, but students can still be honest regardless of relationship  FQ: Could a future research project where students PA with their own class and/or PA with another class (where they don't know the other students as well) and then compare the two PA experiences address the neutral = better perception?
Necessity for Mutual Understandin g	Students describe instances of how both students need to understand each other's work and feedback in order for PA to work.	Mind Map + Discussion: What might the challenges be when giving peer feedback to other students? "Can't think of any feedbacks because their presentation/project is too perfect" "They might be too smart" Arthur: You might run the risk of offering poor feedback that lowers someone's score. Tyler: It might be hard to find errors. Frederick: You might not understand what the feedback is asking you to do. If you and your partner have different writing skills, how might that affect your feedback? Arthur: If they generally get higher grades than you, your feedback will be basic and they might not take it seriously	Keywords: understanding, (differences in) grades

Label	Description	Text Evidence	Links and Additional Info
		Naya: Students with lower writing skills might not notice the same errors, so they're more likely to give extending.  Arthur: Students with higher grades might not have their feedback understood by students with lower grades.  Post-Peer-Assessment Reflection Form: How effective did you feel as an evaluator?  "I didn't said any useful feedback because I didn't understand the story" How valuable did you feel your partner's feedback was?  "I don't know because my partner didn't give me any feedback." How might your relationship with your partner have affected peer feedback?  "It didn't change because I don't get any feedback."  "If its (Lucca) I know I can be honest but if it was (an academically lower student) I don't know how he will feel."	Links with "Good student perceptions": one student reported that they didn't understand the story and thus couldn't offer feedback; unsure of how well other students understood their peers stories and to what extent this was masked
Receiving > Giving	Students describe their feelings about how receiving feedback is easier than giving feedback, and/or describe their perceptions of how their PA partner might be a better evaluator than they are.	Post-Peer-Assessment Reflection Form: What it was like to have to give feedback to another student?  "It was awkward. I don't really like it, but I don't mind." What was it like to have received feedback from another student?  "It was neutral." How effective did you feel as an evaluator?  "Not very effective."  ""Ok, because I'm not that good at marking unless rubrick" How valuable did you feel your partner's feedback was?  "Medium effective." (as opposed to the preceding not very effective)	A portion of the dataset that said they didn't like giving feedback reported more positive experiences receiving feedback

# Appendix B. Consent Form for Parents and Guardians

**Group Mind Mapping and Peer Assessment** 

#### STUDY TEAM

Who is conducting the study?

Principal Investigator:

Dr. Daniel Laitsch, Associate Professor, Faculty of Education

Student Lead:

Mr. Chris Brockington, Graduate Student, Faculty of Education

#### **INVITATION AND STUDY PURPOSE**

Why are you invited to take part in this study? Why are we doing this study?

You and your child are invited to participate in this study because peer assessment is a strategy used with K-12 students in classrooms throughout British Columbia. We would like to learn more about how students interact during peer assessment in order to better understand how peer dynamics peer assessment.

#### **VOLUNTARY PARTICIPATION**

#### Your participation is voluntary.

You and your child's participation is voluntary. You and your child have the right to refuse to participate in this study. If you and your child decide to participate, you and your child may still choose to withdraw from the study at any time without giving a reason and without any negative consequences to the education or other services to which you are entitled or are presently receiving. Please also note that the decision to participate in or withdraw from this study will not have any impact on grades or other forms of academic achievement.

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#### STUDY PROCEDURES

What happens if you say, "Yes, I want to be in the study"? What happens to you in the study? How is the study done?

If you and your child decide to take part in this research study, here are the procedures we will do:

Before the beginning of the study, parents and students will have confirmed whether or not they wish to participate in the study through parental consent forms and student assent forms. Students will preview the assent forms in class under the supervision of the researcher and their homeroom teacher. The assent form will be discussed and completed during a class period prior to the start of the study, but students may take their assent forms home to discuss with their parents or guardians prior to giving or denying assent should they so choose. The assent form will detail why we are conducting the study, what we will be asking students to do should they wish to participate, and will also emphasize that participation in the study is voluntary.

After families have given or denied permission through parental consent forms and student assent forms, students will work in groups, as part of their current writing unit, to respond to a physical mind map that asks the following three questions: 1) "What does peer feedback mean to you?" 2) "What might the benefits be when giving peer feedback to other students?" 3) "What might the challenges be when giving peer feedback to other students?" These physical mind maps will be collected and analyzed as part of the research study.

After students have completed the mind maps, students will be exchanging peer feedback based on a written piece that they are working on as part of their current writing unit. Students will record and reflect upon the peer assessment feedback they provide each other using a peer feedback response page that consists of four questions:

1) "What parts of your writing did your partner celebrate?" 2) "What suggestions did your partner make about improving your work?" 3) "Which of these suggestions will you focus on, and why?" 4) "What suggestions did you actually use from your partner to improve your work, and why?"

The first three questions on the peer feedback response page will be completed after peer feedback has been exchanged, and the fourth question will be completed after students have applied feedback to their writing. The peer feedback response page forms will be collected and analyzed after students have completed them.

Participation in this study will take place over the course of three school periods of approximately 50 minutes, or 150 minutes (two and a half hours) in total. The mind map will be completed during the first period and the Peer Feedback Response Pages and Post-Peer-Assessment Reflection Forms will be completed during the second and third periods.

As every student situation is unique, it is understandable that peer dynamics affect individual students differently. As such, the question "What might the challenges be when giving peer feedback to other students?" may trigger discussions about social inequities or power imbalances between students within a classroom setting. Should these types of discussions be uncomfortable for you or your child, please kindly be reminded that your participation is voluntary and that you and your child may withdraw at any time.

#### **HEALTH AND SAFETY PROTOCOLS**

Please note that the research team will abide by the latest provincial health guidelines in relation to the COVID 19 pandemic. Furthermore, the SFU research study team members are fully vaccinated to mitigate the risk of COVID exposure during the inperson research activities.

#### POTENTIAL RISKS OF THE STUDY

#### Is there any way being in this study could be bad for you?

We do not think there is anything in this study that presents additional risk to you or your child beyond the day-to-day activities that take place in a classroom. Some of the student responses that come up during group interactions during the mind mapping activity could lead to discussions that your child might not feel comfortable dealing with.

Please be advised that the homeroom teacher, counsellor and other school support staff will be available to assist as needed.

#### POTENTIAL BENEFITS OF THE STUDY

## Will being in this study help you in any way? What are the benefits of participating?

We do not think taking part in this study will directly help you and your child. However, in the future, others may benefit from what we learn about how peer dynamics and social interactions affect feedback during peer assessment.

#### ORGANIZATIONAL PERMISSION

Permission to conduct this research study from the Head of School at West Point Grey Academy has been obtained.

#### CONFIDENTIALITY AND DATA SECURITY

How will your identity be protected? How will your privacy be maintained?

#### CONFIDENTIALITY

The confidentiality of you and your child will be respected. Information that discloses your identity will not be released without your consent. Participants will not be identified by name in any reports of the completed study. Pseudonyms will be used instead of the participants' names.

#### **DATA SECURITY**

Data collected during this study will only be stored on password-protected personal drives and SFU drives located in Canada to protect confidentiality. Only the research team and SFU will have access to this data. The data will only be maintained for the duration of completing the study (April 2023 to August 2023), and all collected data will be erased upon publication of the results of the study.

#### **WITHDRAWAL**

What If I decide to withdraw my consent to participate?

You and your child may still choose to withdraw from the study at any time without any negative consequences to the education or other services to which you are entitled or are presently receiving. Please also note that the decision to participate in or withdraw from this study will not have any impact on grades or other forms of academic achievement.

You may withdraw from the study at any time by contacting a study team member listed at the start of this document.

Should you or your child choose to not participate in the study, your child's verbal or written responses to the mind mapping activity or peer response feedback pages will not be included in the study's results.

As the mind mapping activity and peer feedback response page are part of the class's regular writing activities, students who do not wish to participate in the study will still complete the form, but it will not be collected or analyzed as part of the study.

#### STUDY RESULTS

#### How can I access the study results after completion of the research project?

The results of this study will be reported in a student graduating essay, which will be available at the end of SFU's 2023 summer semester at a location yet to be determined. Results may also be obtained from the study's principal investigator.

As this information is being used for a graduating essay, it will be contributing to a paper that will be used to determine the student lead's graduation status.

#### CONTACT FOR INFORMATION ABOUT THE STUDY

Who can you contact if you have questions about the study?

Please contact the principal investigator or student lead should you have any questions about this study. Their contact information can be found on the first page of this consent form.

#### **CONTACT FOR COMPLAINTS**

#### Who can you contact if you have complaints or concerns about the study?

If you have any concerns about your rights as a research participant and/or your experiences while participating in this study, please contact the SFU Office of Research Ethics at <a href="dorsology.com">dorsology.com</a> or 778-782-6618.

#### PARTICIPANT CONSENT AND SIGNATURE

Taking part in this study is entirely up to you and your child. You have the right to refuse to participate in this study. If you and your child decide to participate, you and your child may still choose to withdraw from the study at any time without giving a reason and without any negative consequences to the education or other services to which you are entitled or are presently receiving. Please also note that the decision to participate in or withdraw from this study will not have any impact on grades or other forms of academic achievement.

Your signature below indicates that you consent to participate in this study. You
do not waive any of your legal rights by participating in this study.
Participant Name:
·
Participant Signature:
Date (yyyy/mm/dd):

### **Appendix C. Assent Form**

#### Peer Assessment Study:

My name is Mr. Brockington, and I am a graduate student at Simon Fraser University. I am asking if you would like to take part in a study.

It's your choice if you want to take part in the study.

It is completely up to you if you want to take part in the study, and you can stop at any time if you



decide later that you do not want to be involved. If you change your mind about being in the study, you can tell your teacher, parents or me. No one will be upset with you, and you will not get in any trouble if you decide not to take part in the study.

#### What will happen if you decide to be in the study?

If you decide that you want to be in the study, we will do some peer assessment activities over three class periods. In the first period, we will do a group mind mapping activity. In the second period, you and a partner will exchange peer feedback about your written work as part of your current writing unit. In the third period, you will have a period to edit your written work and think about the feedback that you used to improve it.

#### Are there any risks when taking part in the study?

I do not believe that being in this study will hurt you in any way, but there is a small chance that you might be uncomfortable during our discussions about how it can be difficult to assess our peers. It is your choice to participate in the study, and you can stop taking part in the study at any time you want to.

#### Who will know you were in the study?

Your parents or guardian know that you might be taking part in the study, but I will not tell anyone else. I will make sure that no one outside of our classroom who isn't connected to my research knows the responses you shared on the mind map or peer feedback response page.

Please circle yes or no:	
Has somebody explained this study to you?	Yes / No
Do you understand what the study is about?	Yes / No
Have you asked all the relevant questions you wanted to ask?	Yes / No
Have you had your questions answered in a way you understand?	Yes / No
Do you understand it's OK to stop at any time?	Yes / No
Do you want to be in the study?	Yes / No
If none of the answers are "no" and you want to take part in the study, please write your name and today's date.  Your Name:	
	_
Today's Date:	_
Your parent or guardian must write their name here too if they are happy for y to do the study:	ou
Parent/Guardian Full Name:	
Parent/Guardian Signature:	
Today's Date:	
The researcher who explained this study to you needs to sign too:	
Researcher Full Name:	
Researcher Signature:	

Today's Date:

# Appendix D. Mind Mapping Activity Written Responses

What does peer feedback mean to you?

## **Appendix E. Peer Feedback Response Page**

My Name: My Partner's Name:



#### Peer Feedback Response Page:

1. What parts of your writing did your partner celebrate?	
2. What suggestions did your partner make about improving your wor	r <b>k?</b>
2. Which of these compostions will you focus on and why?	
3. Which of these suggestions will you focus on, and why?	
4. What suggestions did you actually use from your partner to improve work, and why?	e your

## **Appendix F. Post-Peer-Assessment Reflection Form**

My Name: My Partner's Name:



#### Post-Peer-Assessment Reflection Form

1.	What it was like to have to give feedback to another student?
2.	What was it like to receive feedback from another student?
3.	How effective did you feel as an evaluator?
4.	How valuable did you feel your partner's feedback was?
5.	How might your relationship with your partner have affected peer feedback?