

## Teaching Metacognition to Improve Writing

By Sara Islas

My study to improve my students' writing through metacognition began with a simple question: "How do you improve your writing?" I yearned to become a better writing teacher, but often felt like I wasn't seeing the improvements I wanted. I decided to poll my students about what they felt helped them improve their writing most so that I could get some insight about how to take action. 90% of them said that one-on-one feedback from a teacher was the most effective tool for refining their writing. The other ten percent listed peer critique; in focus groups I've asked about peer critique and noticed a pattern that students see only some of it as helpful. One of my students, Jose, said:

We all know who the good critique-givers are and who the bad ones are. Some people give great critique and some people don't care or don't know how to give good critique; Don't care or don't want to do it; don't look at work with a critical eye; people who don't care are not helpful.

Another student, Loni, said, "I love Ms. Sara's critique and it always helps me improve, but it's pretty hit or miss with the students."

Teachers I interviewed at my school expressed a similar urge to provide students with feedback to help them improve their writing. One teacher said:

I wish I could clone myself and place myself around the classroom to help all of the kids. Sometimes I just spend a whole class period doing one-on-ones with kids. They walk away with so much more. Remember in college how helpful it was to get advice on your paper from your professor? Nobody can help you as much as that.

After hearing that one-on-one feedback was so important to the writing improvement process, I decided to frame a research project around finding ways to help students provide their own self-critique and evaluation to lessen dependence on teachers and other forms of outside critique. I wondered, 'why aren't we training our students to fill what is traditionally thought of as the teacher's role and give themselves their own improvement-oriented feedback?' This would require metacognitive skill building, or training and practice in "the ability to reflect on one's own learning and make adjustments accordingly" (NRC- College to Work Research, 2012 p.8).

Improvement research was used as a methodology for this research. Improvement research is focused on learning by doing "iterative cycles of change" which are all meant to enact an aim (Carnegie Foundation, 2016, p. 1). This aim, in my case, improving students' writing through teaching them metacognitive strategies, was developed after conducting empathy interviews and identifying drivers that affect it. My measurable goal was twofold: to see improvement in student's claim-evidence-reasoning style writing and on a metacognition rubric, but also to make metacognition building activities accessible and engaging to my whole classroom. Improvement research emphasizes understanding the problem you are trying to solve in a deep way before actually making changes.

Improvement research serves as a method for accelerating change whose efficacy is measured in disciplined ways. The acceleration is achieved through enacting small changes which can be easily measured, and in turn, improved upon. Plan, do, study, act cycles make up these small cycles, and move you through the implementation of research and change in an active, yet data-driven way. Each time you enter a PDSA, the goal is to generate results which can guide a new and more effective PDSA. For the purposes of my project, each PDSA was aimed at implementing ways to build my students' metacognitive tool boxes.

Being attuned to the varied needs of a large group of diverse learners, my goals in this project were not to teach skills in isolation, but to give my students power and ownership over the writing process by helping them think actively and self-monitor. I have seen the magic that happens after sitting down with a student and giving them feedback one on one.

Improvement-oriented feedback serves as an effective method to improve students' writing. A 2009 study found that a pattern exists between improvement-oriented feedback and the strength of a written text; it revealed that stronger writers often receive more improvement oriented

feedback than weaker writers, illuminating the possibility of a vicious cycle that happens when students are only getting evaluative or negative feedback (Dinnen, Collopy, 2009, p. 2). One reason why improvement-oriented feedback is so helpful in strengthening writing is that it helps writers participate in the metacognitive process of monitoring their progress, identifying their weak spots, and seeking out action plans to improve. Students need to hear and experience the kind of metacognitive feedback that will help them improve their work before beginning to internalize and use it themselves.

I wondered a lot about whether I could give students the skills to begin evaluating, comparing, and refining their own work. As a writing major in college, and after observing student writers, it has become apparent that successful writers are constantly thinking metacognitively about their work. Thus, I began working to help my students develop the ability to be more metacognitive so they are able to monitor and revise along the way so that there isn't as great a need for constant teacher and peer feedback. While many writers have been exposed to the writing process as something to move through, fewer students develop the metacognitive skills to think about their thinking throughout the writing process; metacognition means students are taking time to plan, summarize, question, compare, restate, monitor, evaluate, and refine their writing in a recursive manner so that it's constantly transforming into a better version of their work.

Strong writers actively and metacognitively involve themselves in the writing process by spending more time recursively planning and refining their writing (Graham & Harris, 1992; Hayes & Flower, 1986), by actively monitoring and adjusting the text they are generating (Beal, 1990; Beal et al., 1990), and by maintaining an awareness of their audience (Bereiter & Scardamalia, 1987; Nystrand, 1986). In fact, strong writers embrace the writing process head on, understanding that it is "recursive rather than constrained and sequential" (1998, p. 2). The concept of writing as a process was introduced in the 1980's through the work of Donald Graves (1983) and the model proposed by Flower and Hayes (1980; 1986). "Central to process writing is 'ownership' and 'voice' of the writer as connections are made and meaning is constructed through the crafting of text" (Graves, 1994). Engagement is crucial to building up the courage and desire to navigate the writing process as, "writers need to develop strong beliefs in the relevance and importance of writing and, as they grapple with writing's complexities and frustrations, learn to be patient, persistent, and flexible" (2000, p. 2). In essence, strong writers are filling the role of the teacher or the peer that gives great critique, using metacognition to plan, monitor, and refine their writing as they go.

In that case, why aren't we training our students to fill what is traditionally thought of as the teacher's role and give themselves their own improvement-oriented feedback? This would require metacognitive skill building, or training and practice in "the ability to reflect on one's own learning and make adjustments accordingly" (NRC- College to Work Research, 2012 p.8).

### **The Case for Metacognition**

Metacognition has become increasingly listed as a method for helping students become more strategic and flexible writers. "An ability to monitor their processes might also help them to become more fully aware of the skills and strategies they are learning so that they may strategically apply them," James Pacello wrote in his study "Integrating Metacognition into a Developmental Reading and Writing Course to Improve Skill Transfer," (2010 p. 124). NRC also explained that metacognition can lead to deeper learning (2012 p.8). Metacognition fits into several areas of deeper learning like critical thinking and problem solving, self-directed learning, communication, and self-directed learning, as outlined by the Hewlett Foundation; through metacognition students are able to engage in the deeper learning areas of critical thinking and problem solving because they can "find, evaluate, and synthesize information." Additionally, metacognition can be seen as self-directed in its nature. Depending on the piece of writing, students who naturally analyze their own work are able to more effectively communicate in their writing and oral constructs. Students who are able to evaluate their own work are more confident in it which helps them develop a more academic mindset.

Instruction in metacognition allows writers to understand how thinking about writing can improve one's writing. Metacognition can help give students skills to be more active learners; "it is the control processes which active learners engage in as they perform various cognitive activities" (Raphael et al, 1989, p. 346). Metacognition makes all learning deliberate because learners are conscious of their own cognitive processes, their strengths, and their needs (Flavell, 1976); they are constantly checking and counter checking their understanding. Metacognitive learners ability to monitor their learning allows them to acknowledge when they don't understand something and go back over the content until they do. Nist and Simpson (2000) stated that many students lack metacognitive skills and opportunities to practice them. However, they found that students can be supported to strengthen their reflection and monitoring skills.

Jose's point that "we all know who the good critique givers are and who the bad ones are" mirrors a larger trend around metacognition: students who have strong metacognitive abilities are able to critique their work and improve upon it while students who lack these skills are left to rely on the help of a teacher or peer with strong metacognitive skills if their work is to be improved (Rainville, 1996). Ernest Hemingway has talked extensively about how "writing is rewriting." In my classroom, students who labor over the planning, evaluation, and revision process are students who end up with high-quality work. Thus, how can we expect our students to improve their writing if we are teaching skills in isolation of metacognition?

Teaching writing should be teaching metacognition at the same time. In Tanya Santangelo's article *Why is Writing So Difficult for Students with Learning Disabilities? A Narrative Review to Inform the Design of Effective Instruction* (2014) she writes that writing instruction should promote and facilitate targeted and personalized interventions to help promote writing competency; students who struggle with the writing process benefit from strategies to meet their needs, while students who lack experience with the styles of different models, while students who don't enjoy writing need support finding the value in it (p. 17). Because students run the gamut when it comes to their writing needs, and because writing is a skills that cannot one can never finish learning, differentiation is key. Learning my students self-reported writing levels, and that only 30% of writers score proficient on state tests nationally (Applebee and Langer (2011), my desire to improve my writing instruction practice grew immensely. In a classroom survey I gave, 60% of my students rated themselves as "emerging" writers while 10% listed themselves as "needs support," 20% as "satisfactory," and "10%" as "exceeding."

Santangelo, Hayes and Flower, and Graham all argue that students really learn how to write after they understand and utilize an emboldened form of the writing process, a practice any writer can engage in at any level. B.M Sitko (1998) found that in order to engage students in the decision-making processes necessary to effectively work through the writing process, students must be provided instruction in metacognition (p. 1). The ability to "monitor learning success" (Weinstein, Acee, & Jung, 2011, p. 47) is a crucial dimension of metacognition. Such monitoring can assist students to become more attuned to which skills and strategies help them succeed in different contexts so that they are able to apply them when appropriate; it can also help them identify what part of the writing process they are struggling with so that can seek support in those areas specifically (Weinstein et al., 2011).

Explicitly teaching students how to use metacognitive strategies like self-reviewing, questioning, clarifying, and making predictions, makes it possible for students to enhance and automate their metacognitive skills (p. 1). Paliscar and Brown (1986) found that students could enhance their ability to monitor their own thinking through learning how to use basic metacognitive skills and being reminded to use them (p. 771). In their study, "How an Understanding of Cognition and Metacognition translates into More Effective Writing Instruction," O'Brien-Moran and Soiferman (2010) wrote that utilizing metacognitive skills actually frees writers up to focus on other elements of the writing process: "once metacognitive strategies become automatic students are able to devote more of their working memory to the hierarchical stages of writing involving planning, generating, and reviewing" (p. 1).

When instruction comes with an emphasis on fostering metacognitive development in students, students become more active learners (Caverly, Nicholson, & Radcliffe, 2004; El-Hindi, 1997). A student aware of the metacognitive area is said to be able to monitor the cognitive decisions that he or she

makes and assess the effectiveness of such decisions (Thiede, 2002). For example, while writing, a student can monitor how effectively he or she is addressing the prompt. To be a strong writer, it is essential to not only possess knowledge regarding writing style and structure, but also to possess the ability to continually reassess one's choices as a writer. Students need to be provided with many opportunities to reflect on the skills and strategies they are learning so that they can become more conscious of how those skills and strategies could be used beyond the classroom. Metacognition creates an avenue for all levels of writers to improve by monitoring their learning in order to seek out skills and strategies to improve upon their weaknesses and opportunities to utilize their strengths.

Ambrose et. al suggest that teaching students metacognition can help them become more self-directed learners. "Metacognitive interventions...may be an especially powerful tool in helping the "academically adrift" student find a way to get into the game, to become more aware of the kind of thinking that supports strong academic performance" (Ottenhoff, Liberal Education). In addition to writing improvement, metacognition can span content areas and college preparation skills. Engagement is key to learning, whether it's writing or math; "research shows that the more actively engaged students are-with college faculty and staff, with other students, and with the subject matter they study-the more likely they are to learn, to stick with their studies, and to attain their academic goals" (Community College Survey of Student Engagement, 2006, as cited in McGlynn, p. 106).

### **Site and participants**

High Tech High Chula Vista is a project-based learning school in Chula Vista, California that where teachers and students strive to connect to their community and environment, and the world outside their classroom. Personalization, equity, empowerment, engagement, and student voice are at the center of every teacher's practice. Teaching teams composed of two classes in different subjects (often science and humanities classes) are paired together and share a set of around 60 students. Teaching teams often integrate subjects to create complex, real-world projects for students to engage in.

High Tech High Chula Vista opened in 2007 and has grown from 150 students to over 600. Our students, who are admitted through a randomized lottery system, represent every community in the South Bay and many other areas of San Diego. High Tech High Chula Vista is a Title 1 school, with over 51% of our students qualifying for free and reduced lunch.

Our school is full inclusion; 12% of our population has an Individualized Education Program (IEP). On our 9th grade teaching team (which is an integration of physics and humanities), we have nine students with IEPs. We have two students that qualify as English Language Learners, while 7% of our school's students in total qualify as English Language Learners. 64% of my students are Hispanic, 14% are Asian, 10% are Caucasian, 6% are African-American, 5% are Native American, and 1% are Pacific Islander. 40% of my students have a reading level below grade level, and 20% of my students are three or more levels below grade level based on the Star Reader Test.

### **A Shift to Metacognitive Instruction in the Classroom**

In my effort to find out how I could best engage writers in accessible metacognitive activities that translated into the improvement of their writing, I sought out a variety of ways to make metacognition instruction fun, playful, and collaborative. Throughout my study, I continually designed new ways to help my students embed metacognition into the writing process. In my data collection of student work and interviews from focus groups, I coded for how often different the following metacognitive skills were mentioned, explicitly or implicitly. Based on O'Brien-Moran & Soiferman's ideas about how training in metacognition allows novice writers to begin to understand the effects that thinking about writing has on the writing process my main goal in data collection became seeing whether or not the explicit instruction and heightened focus on metacognition was becoming a part of my students writing process. I emphasized the following areas of metacognition which are all

surrounding process, because Santangelo, Hayes and Flowers, and Graham all argue that students really learn how to write after they understand and utilize an emboldened form of the writing process. Negretti also further supports focusing on metacognition around process through her ideas that an awareness of one's language choices combined with a heightened disposition to overtly thinking about one's writing process, consequently, should result in a greater ability to self-regulate and self-evaluate throughout the writing process (Negretti, 2010, 2012). I derived the following process-oriented metacognitive from a collection of important metacognitive skills listed by El-Hindi (1997), Gourgey (2003), Laverpool (2008) in their writing.

- Planning: are you making a plan or outline of what you are going to write and what evidence you need to collect?
- Summarizing: are you going over what you just wrote and making sure it says what you want it to say?
- Questioning: are you asking questions about what you've written (does it make sense? does it sound too wordy?)?
- Comparing: are you looking at models and comparing your work to it?
- Restating: are you writing it out in a different way or using different phrasing and seeing if it sounds better?
- Monitoring: are you looking over your progress and making sure you are where you need to be/making a plan to get where you need to be?
- Refining: are you seeking out critique and critiquing yourself and then making needed changes?
- Evaluating: are you asking yourself whether or not your work meets the requirements and is high quality?

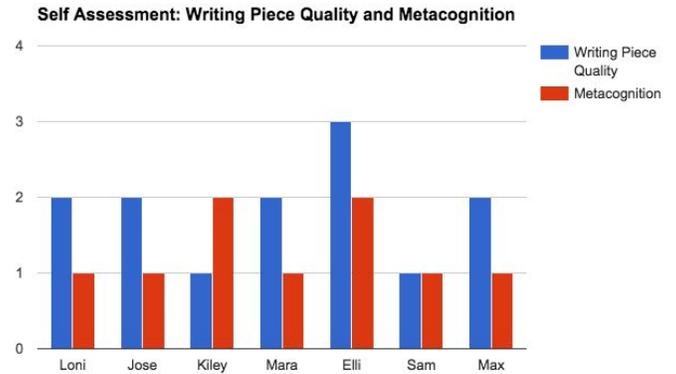
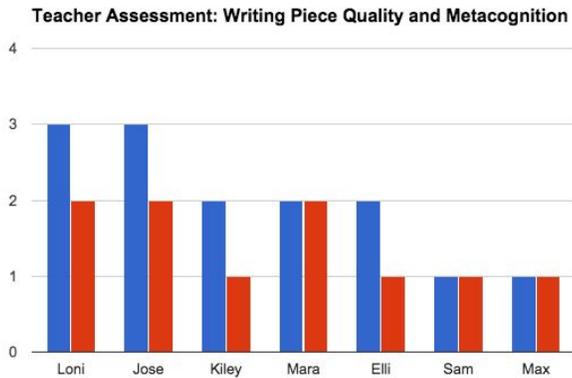
To better understand the effects of my newly implemented instruction of metacognition, I created a focus group of students with whom I would conduct interviews and examine their writing. This group was made up of eight students; six of the students were girls and two of the students were boys. Four of the students have identified as emerging writers, two of students have identified as satisfactory writers, and two of the students rated themselves as exceeding writers; it was important to me to have a mixed group of writing levels. All students are students of color. In the 9th grade, we work on a specific style of writing called Claim, Evidence, Reasoning. Students often turn in writing pieces in this format. I had students assess their writing on a 1-4 scale based on the following explanations:

<b>Writing Score Rubric</b>
<p>1: Not Meeting Goal: Forgets or is ineffective in two or more elements of the Claim, Evidence, Reasoning format.</p> <p>2: Approaching Goal: Forgets or is ineffective in no more than one element of the Claim, Evidence, Reasoning format.</p> <p>3: Meets Goal: Presents a claim that can be argued for or against, uses evidence relevant to the claim, and explains the evidence using reasoning.</p> <p>4: Exceeds Goal: Presents a very specific claim that can be argued for or against, uses evidence that supports the claim, and explains the evidence using reasoning and addresses a counterargument.</p>

<b>Metacognition Score Rubric</b>
<p>1: Little to No Use of Metacognition</p>

- 2: Use of Metacognition
- 3: Effective Use of Metacognition in Most Phases
- 4: Effective Use of Metacognition in all Phases

Baseline Data:

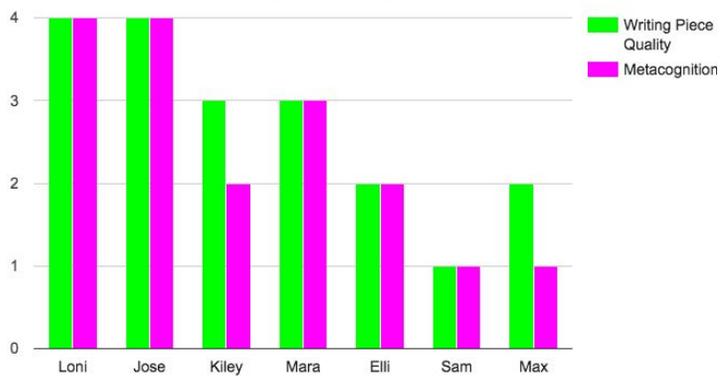


After students rated their writing, I asked them to explain why they gave the score they did. The majority of students gave themselves a score of 2 and explained that it was because they did not have enough evidence to support their claims. This showed me that I needed to scaffold an activity around the metacognition behind finding and evaluating evidence, which turned into a change idea. Next, students explained they gave themselves a low rating because they didn't understand understood the material they were writing about in the first place. This pushed me to design a change idea about monitoring your understanding and developing research questions and another about monitoring your progress with a partner. I noticed another pattern around critique. Many students felt like they were not given helpful critique so I decided to create a change idea to help students give very specific critique, where students are not necessarily giving feedback, but noticing and annotating. I also noticed that a lot of students felt like they were having style and wording problems, which inspired a change idea around students collaboratively restating each other's' writing.

The next baseline data I took was focused on a metacognition rubric. I read through and explained the rubric and then answered questions using specific examples. The sections of this rubric asked students to rate whether they were "using effectively," "using but needing support," or "not applying" the following metacognitive methods: planning, summarizing, questioning, comparing, restating, monitoring, refining, and evaluating. The data showed that most students were not applying or needing support around all of them, with a high need around planning, restating, refining, and evaluating. This was interesting to me because I felt like these were metacognitive parts of the writing process that were most vital, as well as most challenging and time-consuming. For the duration of my study (about 3-4 months) I implemented change ideas to support metacognitive habit-forming in my classroom.

Below is the end data, which shows where students ranked their writing and use of metacognition at the end of the study:

Teacher Assessment: Writing Piece Quality and Metacognition



Self Assessment: Writing Piece Quality and Metacognition



A trend I'm seeing is that the writers who are scoring themselves higher and getting higher scores on both their writing quality and in metacognition are also able to name metacognitive skills and how they are used in their writing. Kiley, for example went from a one in metacognition to a two. She was able to explain how she was increasing her use of metacognition:

I'm using a lot more evidence and thinking- what could they argue back? What could the counterargument be? I plan in advance. Choosing the right word and restating until you get it is really important too.

Sam, for example, did not name any metacognitive skills while discussing his growth. He was very much focused on writing the correct amount of pages, even though there was not a required page minimum. He was also focused on using the writing skill goal (sensory detail) to improve his writing, but not focused on integrating the metacognitive skills he was using. He said, "before I wouldn't use sensory details or a lot of examples... wouldn't write enough as required. Now I write a lot." My hunch is that Sam was giving his attention to what he thought was getting assessed, when in reality, what was getting assessed was the efficacy of his ability to communicate his points clearly through writing and back them up with evidence.

Max, who did not show growth in metacognition displayed that he was not being metacognitive, but instead relying on help from others to improve his work. He said, "I think the improvement plans help," which makes sense because these are done collaboratively and I noticed he was relying on his peer's feedback to create his plan. He also said, "Also, critique is really good. I still don't feel like I'm good at critique." This struck me because in order to be metacognitive you need to be able to evaluate your own work. If Max was not able to evaluate his own work, it makes sense he was still feeling that it was a stretch to evaluate others'.

## Recommendations

I found two effective approaches to support the instruction of metacognition for writing. First, I found that planning writing instruction with a framework that involves play and collaboration helps students engage in metacognition more effectively. Second, I found that common language used across writing genres can help simplify the metacognitive process.

### ***A New Framework***

My original goal was to infuse instruction of metacognition into my teaching and see if it made an impact in my students' writing. After confirming that strong metacognitive skills can be applied to improve writing, I realized that I needed to find ways to intertwine metacognition into the class in an engaging way. This came after my first focus group meeting. Loni, a student whose writing was self and teacher evaluated to be as 4, or accurately representing what she intended to say, and whose metacognitive

skills were ranked as “using effectively,” was able to explain the metacognitive skills she was gaining and why they were helpful to her. She said:

I feel like I’ve taken in a lot of the metacognitive skills and just realized, like that’s what it is to be a good writer. Anyone can do it. If you read over your work with a critical eye, read it all out loud, make improvement plans, and actually make those changes, it’s going to get better. The people that do that have great work.

Another student, Sam, whose writing was self and teacher evaluated as “emerging” and whose metacognitive skills were ranked as “not using” was not able to explain metacognition or why it might not be helpful. However, what he was able to do was name activities I had used to teach metacognition. The activities he named all involved play and collaboration.

Metacognition... I don’t know what it is... ( Interviewer gives reminder of specific metacognitive play strategy used in class) Oh, when you make us read our final draft aloud in an English accent to each other? Yeah, that is helpful because it’s funny and it forces you to hear your mistakes and the other person could catch them if they are listening. Then you can refine.

Sam was explaining the important metacognitive skill of refinement, which we tackled in a play-based, collaborative way in class. As soon as Sam mentioned the activities, the other students in the focus group lit up and started mentioning how helpful those activities were. They did not mention the individual reflection activities we did. Below is a list of the collaboration and play-infused activities we did to build metacognition with samples of student writing and student quotes about how they felt it helped improve their writing. See appendices for a list of the metacognitive strategies that were used in my classroom.

*Looking at an example of student work transformed through metacognitive activities:*

In looking at their own writing, students were able to explain the metacognitive activities that helped them improve their work. Below is Elli’s thesis, which she improved using several of the activities above.

Here is Elli’s original thesis about the impact of the Industrial Revolution:

*The Industrial Revolution changed the relationship between humans and their environment.*

After the sentence puzzle activity which students compared Elli’s work to a model, she realized: “it was not specific enough. The puzzle we picked apart was really specific. The idea was there but I was not saying what exactly happened.

*During the Industrial Revolution manual labor was replaced by machinery, causing an increase in factories.*

After the 3rd grade, 9th grade, college level activity, Elli realized she could add more of a significance to her thesis: “the college level was supposed to answer ‘so what?’ so I made sure to add that.

*During the Industrial Revolution manual labor was replaced by machinery, causing an increase in factories for the crowded population and making a large amount of coal pollution and waste that affects our health today.*

After the restating activity, Elli’s peers gave her many ideas: “I could use a semicolon so I could attach two thoughts, I could mention the word surplus to show cause and effect, and I could make the last part of my sentence a parallel so it felt more organized.” Below is her final thesis:

*During the Industrial Revolution manual labor was replaced by machinery; this created a surplus of workers amongst an already crowded population and caused us to use a huge amount of coal which causes pollution and waste that continues to affect our health today.*

This student example and many others provided evidence that my students were exposed to metacognition by being able to access to activities that were scaffolded to their level. Often, I saw the gatekeeper to metacognition take the form of complexity and confusion; however, once I could break down metacognition into small steps, students were able to utilize it.

### **Common Language**

Kylie, Elli, Sam and Max all expressed a feeling that writing was subjective. In an interview, Kylie said, “you are a good writer or a bad writer, we all know who they are in class.” Sam said, “refine to get your work to where the teacher wants it.” Max said, “Writing seems like a puzzle, like, I hope the teacher will like it, but I’m not sure sometimes. Elli, expressed a similar feeling, “I like knowing exactly what I need to do and writing seems more creative.”

However, when I asked the same group of students how they have improved in their writing, they were able to name explicit skills such as, “using evidence to support my claims,” “using sensory detail,” “reading my writing aloud to proofread it,” and “create an improvement plan and update it.” Thus, I am finding a correlation between how much students feel they are improving and their ability to list specific writing skills, especially amongst the emerging writers. The writers who are not emerging at all, and really not showing growth, are only able to name a few skills they’ve learned, but are unable to name any metacognitive skills. Thus, collecting, modeling, using, displaying, and continually fostering the language around metacognition is vital if students are expected to begin implementing it themselves.

Focused writing skill goals can help writers improve while increasing metacognitive abilities. Using a portfolio to collect and categorize all of the students’ newly attained skills has been a really effective tool. (Here I will insert photos of student portfolios and flipper books). When students are able to list their skills, they feel like they have been improving. This also helps student build confidence about their writing. Often, struggling writers feel stuck or lack a growth mindset. Max demonstrated this correlation between being able to name growth and perceived growth in an interview: “Last year my writing was horrible; my teachers didn’t care about my writing. There were a ton of mistakes and they would publish it anyway. I learned to revise this year because well I read back to my first draft and I noticed that there was a lot I would improve on if I revised. CFFs read it over. Helping by comparing models and planning helps a lot because I could set up my whole story.”

Being able to name specific skills one is building can help elicit feelings of growth. I had students keep a flipper book of the writing skills they had gained, which they could use as a reference book. All 7 of my focus group students referred to this book when talking about their writing improvement, each in different ways.

When critique and the language used in critique is geared toward the metacognitive process, anyone can do it. However, when critique is more holistic and relies on a student’s ability to give quality feedback and suggestions, the writing hierarchy is only further entrenched. Instead, critiques that ask students to engage in metacognitive activity are not skill-based, but process based and allow all to participate effectively. Kiley discussed feeling growth as a writer and mentioned the feedback groups as a reason for her improvement: “I write with a purpose. Peer editing, feedback with groups, when we talk about our writing in class and we talk about how our writing needs work.”

In order to have successful conversations about writing in feedback groups, students need to be able to communicate with language about the writing process. For example, we did a critique were all a student had to do was summarize another student's' thesis and by doing so explain if they understood the thesis, if they felt it followed the five established rules we had created for a thesis, and if they saw any ways it could improve. While only 70% of students were able to give helpful advice about how a student's thesis could improve, 100% of students effectively summarized another student's' thesis,

explained what it meant, and evaluated whether or not it met the criteria for a thesis. The language for this critique as instructed in a prior lesson, posted on the wall in a model, and defined on the critique sheet. Improving students' ability to critique helps improve the writing quality of the classroom.

High quality writing is a goal that can help motivate writers and make them feel proud of their work, as Loni explained during an interview: "There was a project last year that we didn't revise. We weren't proud of our work. This year there is a bar we need to meet and we talk about and see examples of how to meet it. When we check in and set goals and encourage each other, it's really good."

Another valuable reason for developing a common language around metacognitive skills used in writing is that it provides a way to have a growth-mindset oriented conversation (Dweck 2000). When students are evaluating whether or not they actually engaged in the metacognitive processes, and they see that maybe they skipped a couple of parts, it provides an excellent opportunity to have a conversation with the student about where the piece of writing could be if they student had completed the process. This moves the students from having a set mindset about their writing to having a growth mindset about it.

## Reflections

My study was centered around improving my students' writing, and changed my mindset around teaching from being reactive to responsive and proactive. Rather than thinking, 'what should I do if my kids are struggling with this?', I began to identify areas of difficulty and develop ways to provide support. I started pairing areas my students were struggling in with metacognitive skills I thought could help them improve upon that specific problem-area. I think this was due to the nature of improvement science: I got used to figuring out what needed to be improved and how I could make it better. I noticed that once I began thinking this way, my students began thinking this way as well. One of my favorite moments of the year was while writing spoken word poems, one of my focus group students, Kiley, asked "is there an outline I can use to help plan my writing?" She helped me develop an outline using models that we distributed to the whole class. Later on in the process she said, "I am going to need you to send me more models so I can compare how good my writing is." Max, who had struggled with writing all year wanted to read his spoken word aloud to a partner so they could check it for "weird sounding sentences" (evaluation) and later asked me how he could "use different words to make it sound better?" (restating). The beautiful thing about this year was the multitude of students who began engaging in metacognitive habits, from students *questioning* the wordiness of their writing to other students *summarizing* a partner's writing to check if that's really what they meant to say. In environments where writing is valued and revision is the norm, students are eager to improve their written work. Students want to be proud of their writing and show it off to an audience. Giving them metacognitive tools to do so helps empower their mission, which is already very much in motion.

## Appendices

- **Monitor Check-Ins**

Metacognitive Goal: Monitoring (are you looking over your progress and making sure you are where you need to be/making a plan to get where you need to be?)

Collaboration/Play Aspect: Talk with a group of four; compile questions together; give stickers after sharing progress

Quick Directions: During a writing assignment, have students sit with a group of four. Each person in the group has a speaking token. Each person in the group is asked to share their progress on their writing, including one element they are proud of and at least two areas they need help on. Together, the group should come up with a list of questions they want to ask to get support on their writing.

- **Improvement Plans**

Metacognitive Goal: Planning (are you making a plan or outline of what you are going to write and what evidence you need to collect?)

Collaboration/Play Aspect: Another person writes for you; using a big sticky you add yours to the board

Quick Directions: Using critique from peers and a teacher, student collaborate to make an improvement plan for their writing. One student lists out what they need to do and the other student makes a checklist on a giant sticky. All stickies are posted and updated on the wall to celebrate the revision process.

- **3rd grade, 9th grade, college level**

Metacognitive Goal: Restating (are you writing it out in a different way or using different phrasing and seeing if it sounds better?) and Summarizing (are you going over what you just wrote and making sure it says what you want it to say?)

Collaboration/Play Aspect: Turned into a performance challenge

Quick Directions: The point of this is to enhance writing. We did this with writing a thesis. First, students pretended to be third graders and wrote an incredibly simple version of their thesis using third grade language- the point was to focus on the idea not the writing. The class votes if it passes 3rd grade level. Then, students are required to make their thesis flow better and be more specific about the language their use and again students vote if it passes 9th grade. Last, students focus on improving the language to the best of their ability to make the theses college level.

- **Sentence Puzzles**

Metacognitive Goal: Comparing (are you looking at models and comparing your work to it?)

Collaboration/Play Aspect: Solving puzzles made out of writing; make it into a competition for who can solve fastest and who can best explain how they solved it

Quick Directions: Teacher cuts up an excerpt from a writing model and students have to reorder the line. As we are focusing on claim, evidence, reasoning style writing, it is helpful to find writing that fits this format so that the students have to deeply consider what makes claims, evidence, and reasoning.

- **Restating**

Metacognitive Goal: Restating (are you writing it out in a different way or using different phrasing and seeing if it sounds better?)

Collaboration/Play Aspect: Students move around and reword one another's work

Quick Directions: In this exercise, students have to get at least three other people to restate a sentence they are struggling with. Then, they choose the best of the restatements and use it for a final revision.

- **Evidence Checks**

Metacognitive Goal: Refining (are you seeking out critique and critiquing yourself and then making needed changes?) and Evaluating (are you asking yourself whether or not your work meets the requirements and is high quality?)

Collaboration/Play Aspect: This is a debate style tournament

Quick Directions: In this activity, students are having a tournament debate; two students go head to head and debate using their evidence. Whoever has stronger evidence moves on, and suggests how their former opponent can improve their evidence. Finally, a top two are revealed, and the rest of the class evaluates who has stronger evidence and "wins."

- **English Accent**

Metacognitive Goal: Questioning (are you asking questions about what you've written (does it make sense? does it sound too wordy?))

Collaboration/Play Aspect:

Quick Directions: Students perform their writing to another student in an English accent to see if it makes sense or if there are any typos. They are really pushed to listen to their writing and the writing of their partner and try to spot where improvements can be made by sound.

- **Evaluate, Vote, and Refine**

Metacognitive Goal: Refining (are you seeking out critique and critiquing yourself and then making needed changes?) and Evaluating (are you asking yourself whether or not your work meets the requirements and is high quality?)

Collaboration/Play Aspect: Group talk and work

Quick Directions: Students read a piece of their writing to a small group. That group votes on whether that aspect of their writing is meeting the intended goal. For example, a student could read a portion of their writing that they have labeled as reasoning and the group will vote on whether or not it is effective

reasoning by giving thumbs up (effective), sideways (needs some improvement), or down (needs major refinement). Then the group will discuss how to refine the work and the student will take notes.

- **Feedback Groups**

Metacognitive Goal: Refining (are you seeking out critique and critiquing yourself and then making needed changes?)

Collaboration/Play Aspect: Group talk and work

Quick Directions: Students work in groups and using a speaking token they share one part of their writing they are proud of and one part they are struggling with. The other students are equipped with a list of metacognitive skills which they could recommend the student uses to improve their work.

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