



Using Pedagogical Documentation to Enhance
Inquiry-Based Teaching & Learning:
The Power of Reflective Practice for Teachers and Students

PRACTITIONER BRIEF



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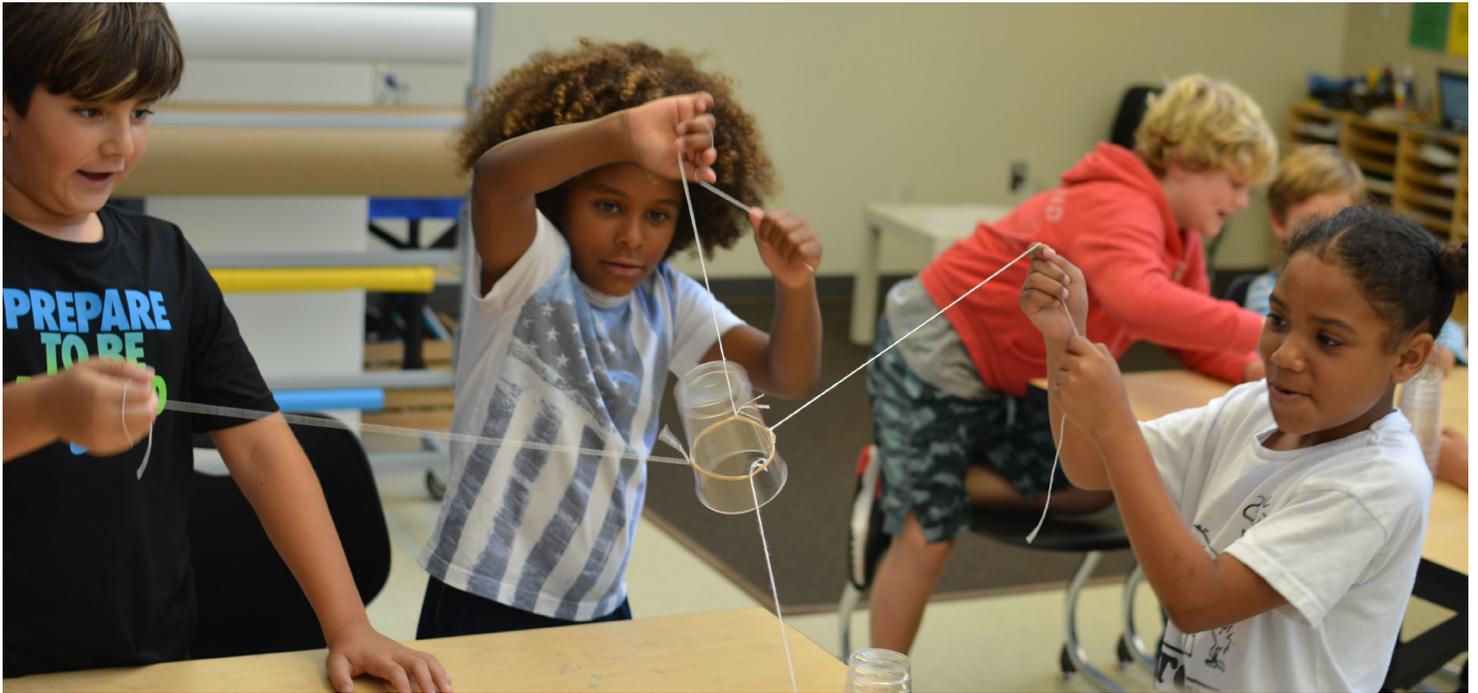
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INTRODUCTION

How did I solve the problem? Why did I use that strategy? What are my next steps based on what I learned today? How has my thinking changed over time? How did my work today help me see something from a different or new perspective? From Early Childhood through Upper Levels, students at UCLA Lab School are reflecting on their own learning process, and they are asking themselves and their peers questions to clarify and identify changes in their thinking over time. Both students and their teachers document the students' thinking in various forms including writing, photographs, sketches, and recordings. This work, called pedagogical documentation, involves recording the teaching and learning process. It encourages students to consider their own thinking and that of their peers, and it enables teachers to listen closely to children's voices and follow their ideas. Pedagogical documentation becomes a resource for student reflection and learning as well as for teacher reflection and planning.

Teachers at UCLA Lab School initiated an action research project to investigate the practice of documentation by students and teachers as part of inquiry instruction in an elementary school setting. This brief will introduce pedagogical documentation and summarize what UCLA Lab School teachers have learned from their research. The research team offers these findings so that teachers in other school contexts may consider possible implications for use of pedagogical documentation to promote active learning and reflection in their classroom communities.

DEFINING PEDAGOGICAL DOCUMENTATION

"Documentation is seen as visible listening, as the construction of traces (through notes, slides, videos and so on) that not only testify to the children's learning paths and processes, but also make them possible because they are visible. For us, this means making visible and, thus possible, the relationships that are the building blocks of knowledge."

— Carlina Rinaldi, *Making Learning Visible* (2001)

Pedagogical documentation is a practice that originates in the Reggio Emilia approach to preschool education. It involves teachers making visible records of student thinking during instruction (Turner & Wilson, 2009). Teachers collect samples of student work, take photographs of students at work in the classroom, and transcribe students' conversations. Teachers post this documentation of student thinking and work in the classroom and shared spaces, and they encourage students to consider it as they work and play. These records then become resources for learning within the classroom (Falk & Darling-Hammond, 2009) and for communication with external audiences (e.g., parents [Picchio, Di Giandomenico, & Musatti, 2014]).

THE ACTION RESEARCH PROJECT

School Context

UCLA Lab School is the laboratory school of the UCLA School of Education and Information Studies (Ed&IS). The school population of approximately 450 children, ages 4-12 (roughly pre-K through 6th grade) reflects the diversity of the state of California based on the most recent census data. The school is organized in four levels: Early Childhood (4- to 5-year-olds), Primary (6- to 8-year-olds), Intermediate (8- to 10-year-olds), and Upper (10- to 12-year-olds). In addition to teaching and learning, the school's mission is to engage in research and public engagement, working collaboratively with public schools.

UCLA Lab School organizes curricula using an inquiry framework. The school's inquiry approach to teaching has its roots in the leadership and creativity of Principal Corinne A. Seeds (1925-1957), who was influenced by the teachings of John Dewey and James Kirkpatrick. She was a key figure in developing and promoting progressive education. Seeds studied at Columbia University to learn how to engage children in "learning by doing" to make the curriculum come alive. She believed that "to keep education dynamic, children must have experiences that they care about" (*Christian Science Monitor*, September 18, 1957). Seeds was also very interested in the school's physical environment, working closely with architects Robert Alexander and Richard Neutra to design a school that promotes children's movement and exploration, as well as their interaction with the outdoors (Los Angeles Conservancy, n.d.).

"The kind of learning (children) make a part of (themselves) depends on the richness, variety and worthwhileness of (their) environment"

— Corinne A. Seeds, University Elementary School (now UCLA Lab School), 1925-1957

Building on these ideas, the school has developed an inquiry-based curriculum emphasizing critical thinking that has evolved and grown for almost a century. Teachers at the lab school believe that children and adults co-construct their knowledge through interactions with people and the environment. The inquiry-based curriculum depends on the school's foundational approach to supporting a positive and safe social-emotional environment. The school has developed a system that encourages students to collaborate, to be inclusive, to listen to diverse perspectives, and to be reflective in their learning.

These educational values are also apparent in Reggio Emilia Schools, another source of inspiration for the lab school. The similarities between the lab school and Reggio are not surprising since both pedagogies have roots in the educational philosophy of John Dewey. More recently, lab school teachers have been considering the use of documentation, in part informed by Reggio practice. In the action research project, teachers are exploring these ideas in the context of an elementary school in the United States.

Prior to this action research project, teachers at UCLA Lab School worked to establish what documentation looked like in science and social studies. A teacher committee developed a Documentation Checklist to help teachers create classroom and hallway displays (see Documentation Checklist: <https://ucla.box.com/v/documentation-checklist>). The checklist included guidance on what and how to document in the classroom. Teachers recorded student questions and conversations, took photographs of independent and small group work, and collected samples of student work. Teachers also wrote a summary of the investigation and their own reflections on the inquiry process. While these displays of inquiry are one important outcome of pedagogical documentation, they were largely summative, assembled by teachers, and made public at the end of an investigation.

Teachers saw value in the practice of recording and displaying student thinking and work. It helped keep the focus on student voices and to tell the story of the class's investigations. However, some colleagues felt that documentation was too complicated, too time-consuming, and too removed from the day-to-day work of teaching. As a result of these challenges, teachers from multiple levels saw a need to develop, refine, and expand the practice. They formed a research team to study the essential components of documentation, find ways to help colleagues use documentation at every level of the school throughout the inquiry process, and reconsider how it could inform teaching and learning.

Their intention has been to explore the difference between using documentation to display student work at the end of a study versus using documentation throughout the study to make student thinking visible, encourage self-reflection, and inform student and teacher decision-making. In addition, the teacher researchers identified two important ways to extend the practice of documentation: for students to become documenters of their own work and experience, and for teachers to use documentation as formative assessment.

In 2016-2017, the teacher-research team applied for a teacher grant from the Cotsen Foundation for the Art of Teaching to support these action research efforts. At about the same time, CONNECT, a research center affiliated with UCLA Lab School and Ed&IS, offered to support teacher action research projects with graduate student researchers. The action research has continued and evolved across three school years. The first year focused on documentation as a means to foster student engagement in the classroom and use documentation to reflect on the process as well as the products of inquiry. In subsequent years, the team explored ways to involve students in documenting their own work and ways for teachers to use documentation to inform their instruction. They have shared their efforts with colleagues at the lab school and in Ed&IS through professional development and after-school workshops.

An important goal of the project has been to build shared professional knowledge and practice among teachers at the school. The team contributed to schoolwide professional development about inquiry-based teaching and learning. In



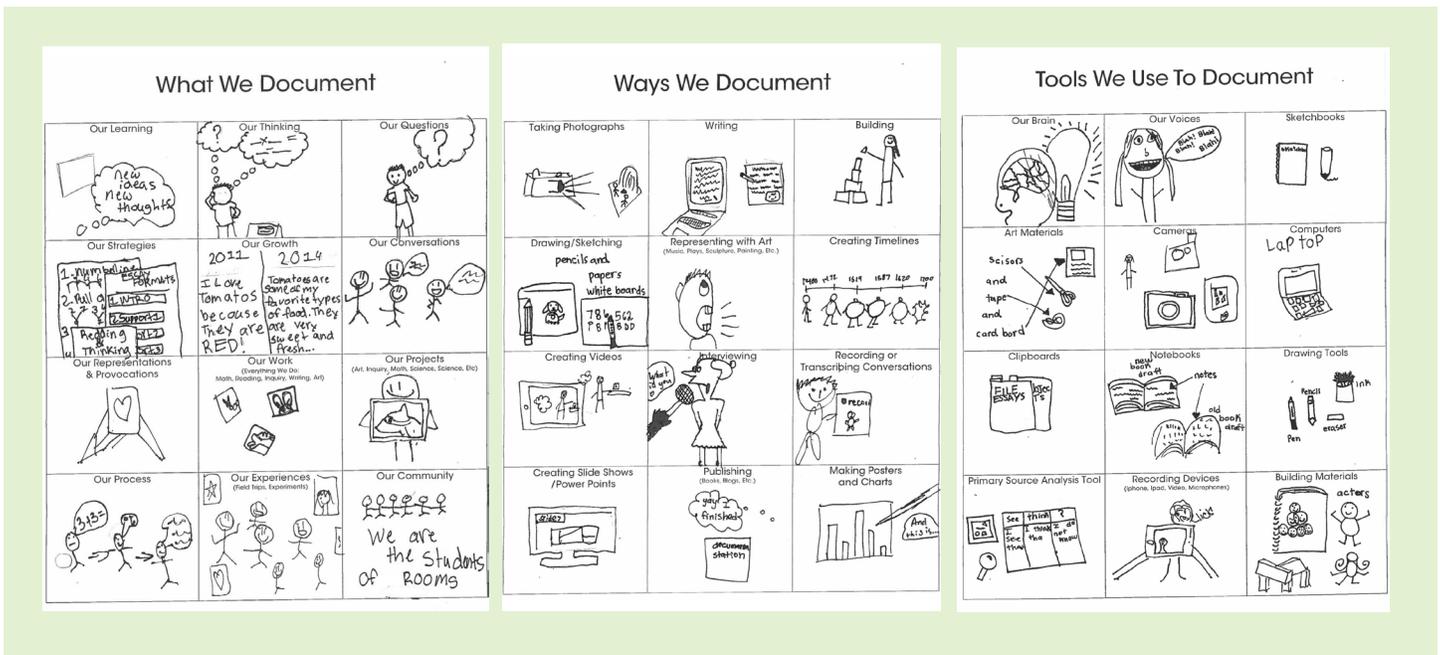
particular, faculty wanted more experience and knowledge about documentation. The school invited pedagogical leaders from Opal School in Portland, Oregon to share their insights and practice related to documentation. Another way the team worked to build shared professional knowledge and practice was to actively recruit teachers from all levels to participate in the research project. As a result, the team grew from an initial group of 8 teachers to 14 teachers over the first three years of the project. The team conducted an annual teacher survey to understand the effects of changing documentation practices across levels and curricular areas. The teacher researchers have learned important lessons along the way.

WHAT TEACHER RESEARCHERS HAVE LEARNED ABOUT PEDAGOGICAL DOCUMENTATION

Developing a Shared Understanding and Purpose for Documentation

Through the study, the research team learned that teachers and their students must first understand the purpose of pedagogical documentation in the classroom. To develop this understanding, teachers found it helpful to initiate a whole-group discussion with students about why pedagogical documentation is essential to reflective learning, what the tools are, and how to use those tools. Even if students and teachers have had experience with documentation in previous years, the research team saw the importance for every class to think about, discuss, and record their ideas so they can build and document a common understanding of the practice and its value.

Intermediate and Upper students explored what, why, and how to document, and they recorded their thinking on anchor charts that students and teachers could reference throughout the year. Students and teachers understood that the main purpose of documentation in the classroom was to capture the essential elements of each investigation and keep students' voices at the forefront of the investigations as they unfolded. Documentation can capture both the work of the class as a whole as well as individual student progress.



Documentation needs to be an authentic part of student work. If students perceive it as an additional task, documentation is not as effective. The team experimented to find ways of making documentation and self-reflection integral to the work of the day. Teachers at the Early Childhood and Upper Levels had students look at the sketchbooks of some prominent artists and scientists such as Leonardo da Vinci and Marie Curie. By examining these primary sources, students observed how scientists and artists have used sketchbooks and notebooks to document and reflect on their own thinking. These sketchbooks and notebooks enabled students to make authentic real-world connections with the practices of documentation and reflection and recognize their value inside and outside the classroom. While working on social action projects, Upper students asked experts in engineering and design about how they document and think about their work. This was another example of students recognizing that documentation is not just busy work. It is an authentic life skill.

Early Childhood — Using Sketchbooks

Early Childhood students had been hard at work drawing blueprints for their culminating project, a model of the school made out of paper. During a class meeting, the children reflected on photographs of themselves working on their blueprints. One photo was of a girl named Beatrice that showed her adding details to her blueprint with her sketchbook opened next to her. When asked to share with her classmates, Beatrice said: “This is my sketchbook so I could look in here so I know. If I didn’t have my sketchbook, I wouldn’t know what to draw, and if I did have my sketchbook I could draw what was on my sketchbook!”



Classroom Systems, Tools, and Routines

While examining teacher and student documentation, teacher researchers came to understand that this practice is both individual and collective. Teachers worked to create a system in the classroom that recognized the interdependence of individual and whole-class learning. Students reflected on their own work and thinking, which in turn informed the thinking of other classmates and teachers. This system involved routines and tools that enabled students and teachers to incorporate documentation as part of classroom practice.



Initially, the teacher researchers focused on identifying a variety of high-quality tools and ways to make them readily accessible to students. During the first year, the team developed the notion of a "Documentation Station" equipped with cameras, iPads, clip-boards, various papers, and mark-making materials (pens, pencils, markers, etc.). Students used these tools to: create videos and audio recordings; take notes on their conversations; photograph one another and their work; and record their thinking and reflections with text, drawings, diagrams, and labels.

The tools were all placed on a rolling cart that could be moved around the classroom for easy access by individuals and collaborative groups. To facilitate students' ability to independently document their own work, they learned how to take care of the equipment and to put things away neatly at the end of the session. In the Early Childhood and Primary Levels, teachers introduced tools

one at a time so that students would become comfortable with that tool and its use before starting with another. Whatever the age or developmental level, students experimented with the tools and learned how to compose images, record sound, and organize data so that they could capture the information that they felt was most important for their documentation. They used these skills to record their own thinking as well as that of their peers.

Primary — Math Strategies

Primary teachers facilitated conversations with students about how to use different tools to document their thinking. Students began documenting math strategies with pencil and paper. They took turns recording how a partner solved a math problem and asked questions to better understand their partner's thinking. During one lesson, some students expressed frustration at how hard it was to keep up with their partner's problem-solving process.

As the teacher conferred with pairs of students, she heard Adam remark to his partner, "Stop! Wait! You're going too fast!" The teacher paused to speak with the two students. Adam explained that he was trying to record all the steps his partner was taking, but he couldn't write as fast as his partner was working. "When I'm asking the questions, it's really taking away from the time we have to write." Adam wondered if there were a way he could capture all the steps that his partner was taking. Could he use a camera to record his partner's work?

At the end of class, the teacher called students to the rug for a debrief of their lesson. She displayed photographs of Adam's documentation on the screen. She shared her conversation with Adam and asked him to narrate the photographs for the class. After he talked about the steps his partner took to solve the math problem, the teacher asked him, "Was it helpful taking pictures? What were you thinking you can do with all of them?" Adam answered, "I can print them out and see the steps my partner took."

Adam's experience prompted the class and the teacher to reflect on the need to match the tool with the purpose of the documentation. In this example, the students were trying to capture the whole problem-solving process without interfering or delaying their partner's thinking. A number of the students could not do this with paper and pencil, and therefore identified a new tool.

In documenting the work of the class as a whole, teachers and students began to create and use interactive learning walls in the classroom. Teachers posted student reflections on a designated classroom space. They provided ongoing opportunities for students to interact with the learning wall. Students read their own and others' reflections and discussed how these could inform their continuing investigation. Teachers and students added questions, quotes from conversations, evidence of student experiences, photographs of students working, primary sources, and other materials or artifacts from the investigation. The important thing here is that both students and teachers regularly considered these photos, drawings, student comments, and other student work. Initially, teachers created these learning walls. Over time, they realized that students needed to be involved, not only in creating the documentation, but also helping make decisions about what to post and co-constructing the learning wall. Teachers involved students in building the learning walls based on their age and developmental level.

Intermediate — Creating a Timeline as a Learning Wall

Intermediate Level students were investigating California history through a study titled “Waves of Change.” Initially for this investigation, students were given a brief description of a person from California history. Then taking on the persona of these historical figures, students interviewed each other. The teacher asked the students, “How can we see the connection among these people?” The students suggested a timeline where they would place the dates and their historical figures.

Following this, students chose a person or event that interested them to research on their own. As part of that research they found a primary source and wrote a description of that person or event. This research was the foundation for an informational text that students wrote and published later as part of their language arts curriculum.

Building on all these experiences, the students suggested they create a more comprehensive timeline in the classroom by organizing all of their research chronologically. The description they had written and their primary source were posted on the classroom windows. This timeline became a learning wall, a form of documentation that helped students keep track of their interests and research. It helped build their understanding and was used to stimulate their self-reflection. It was always available for students to reference and expand. This sparked students’ interest in including their own families’ stories – they wanted to put themselves and their families on the timeline. They realized that telling each other’s stories is telling history as well. They loved to look at each other’s histories and got to know each other better. A guiding question that emerged from the work was “What can we learn about California history through our stories and the stories of others?”

In addition to documenting their work on the timeline, students documented their research, ideas, and thinking in their sketchbooks. This documentation helped students identify patterns in California history. In one sketchbook, Marco recorded his thinking: “Is history repeating itself or has history never changed? Those are the two über deep questions going around in class.” Another student, Samantha, wrote on a page titled Reflection (Inquiry): “What connections can I make [to] America’s history? One thing hasn’t changed that there are always ups and downs and different perspectives. In a wave there’s an up and down at the same time.”

The culminating project for this investigation was a class mural that enabled the students to share and showcase their research about and understanding of California history. Their reflections about patterns, connections, and the timeline informed what would be included on their mural. Students brought in primary sources they felt should be included. They had conversations about how the rocks in the foreground of the mural would represent the obstacles that were faced by people throughout California’s history as well as obstacles to change.



For students and teachers to productively use documentation tools and create learning walls, the action research team learned during the third year of the project that they needed explicit classroom routines to record student work and thinking as well as show the process and products of learning.

While documentation routines may vary based on the classroom context, lab school teachers found the following questions useful in considering how to incorporate documentation:

- How can documentation routines be part of the way teachers launch their classroom in the fall?
- Do students rotate the role of documenting for the class or does every student document their own work individually?
- How will students share and reflect on their individual documentation and that of other students?
- When do students document during the school day? How often do students reflect on and document their work throughout the week? Is there a set time for self-reflection?
- How might routines change, depending on the developmental level of the students?
- How are documentation tools introduced? Do students have free choice or is the tool set by the teacher?
- How might these routines change over time or with the curricular area?
- How will students and teachers organize and store documentation?
- How will students and teachers build the classroom learning wall?

Early Childhood — Documenter of the Day

Building upon conversations about documentation and its purpose and on experiences exploring different documentation tools, Early Childhood Level students began a new classroom routine: Documenter of the Day. As Documenter of the Day students were given full access to a digital camera to take photos whenever and of whatever they wanted. At the end of the day, a teacher would then pull the child aside to choose the three “most important” photos to share with the class at the end of the week.

Winston was the first child to take on this role, and he documented the day with gusto, photographing both inside the classroom and out on the yard. While the teachers expected students to document the day’s events, Winston took a different approach. The three photos Winston selected included a picture of his brother (an older student at the school), one of his teachers, and one of his best friends. When asked why he chose those photos he said: “Because I love my Buh-Buh. And I love my teachers, and I love playing with José.” This led the teachers to think of the way young children experience school and what is in fact most salient for them. For Winston, the relationships with his family, friends, and teachers were front and center.

The daily documentation practice continued for two months. Each child had two opportunities to be Documenter of the Day, and the whole class had several opportunities to review and talk about the photos taken that week. The photos varied greatly, based on the events of the day and the personalities of

each student. By the end of the period, however, teachers noticed that students began to take fewer pictures of their friends and more pictures portraying what happened that day. They also became more expressive about the reasons for choosing their pictures, often citing that they’d wanted to remember their experience a long time from now. One student, Mariana, spoke about her choices and found a “story” in the photographs: “It was different this time because I chose more of a story. Like: ‘One day, our teacher was letting us line up to go to the [play] structure and I found something.’” In this process, students began to see photographs not only as a way of capturing what they love but also as a way to remember their days and tell stories.



Documenter of the Day:

Date: 4.12.2019

Which 3 photos do you want to share with the rest of the class? Why do you think these are important?

Because I really wanted to remember those fruit kabobs so we can make them again. We could look back and when I was grown I could be like, “Oh yeah, I remember that! I can make those with my son now”. I picked this one because it’s really and I like how it’s some light and has strikes of rainbow. I thought it was cool to see that ball flying in the air.

What did it feel like being the documenter of the day? Did it feel any different this time?

It was a little bit different. I took less funny pictures so it felt a little bit different. I was more into really cool things happening.

Using Documentation for Reflection

While learning walls tracked collective learning, students also recorded their individual thinking and learning throughout an investigation. Students jotted notes about their ideas, drew diagrams and flow charts, took photos, and video or audio recorded conversations with peers. It was important for students to be able to collect and organize these records. They could use sketchbooks, notebooks, binders, or a digital portfolio. Sometimes teachers chose the medium; sometimes it was the students' choice. A key purpose of collecting these records was for students to reflect on their work products and the process of creating those products. For example, they might ask: What did I learn? What worked well? What were the sticking points? How did I collaborate with my group? What are my next steps? What are the next steps for my group?

Teachers noticed that students found it more difficult to reflect on what they had learned from informational texts than they did in their collaborative projects or math problem solving. Together, teachers and students often co-constructed a menu of question stems for students to choose from as they developed these reflection skills. Many of the teachers observed the delicate balance between asking closed or directed questions and more open-ended ones. They noted how the question was framed greatly affected the quality of students' responses. Initially, the students' reflections were skimpy. After some class discussion and reframing the questions to scaffold student reflection, teachers asked students to consider how and why their thinking changed based on what they had read that day; responses were more reflective and insightful.

Teachers also found that they needed to plan opportunities for students to go back to their reflections, re-read them, and consider how their thinking had shifted and/or expanded over time. For example, Upper teachers provided sentence stems to scaffold student reflections such as:

Yesterday I thought....because...

Today I think.....because...

Upper level teachers also developed a daily routine of reflection in sketchbooks at the end of the research or building session. Teachers wanted students to both think about what they had accomplished that day and what they might do in subsequent sessions. They also wanted students to think more metacognitively about their work: Why did it matter? How did it change or confirm their thinking? This reflection routine helped students not only provide more information about their insights but also the reasons for the change in their thinking. Teachers observed that these routines for self-reflection and self-assessment fostered a habit of mind that built deeper conceptual understanding.

Upper — Designing for Social Action Projects



As part of making their study of ancient civilizations relevant, a team of Upper students designed an aquaponics system that they thought might address our current civilization's need to both provide food for people and conserve water. They documented their thinking in the form of a plan. The students paired up and chose tasks. Two students worked diligently on the PVC pipes that housed the plants and connected the system's components (plants and fish tank). When the two put their PVC construction to the test, they quickly realized that the PVC pipes couldn't be too slanted or too horizontal, as they had documented in their plan. Instead they had to be installed at a slight angle so that the water could flow from the plants to the fish tank. Also, the angle had to be gentle enough so that the nutrient-rich water from the fish tank could be pumped up to the plants. Comprehensive documentation was key to this process. By testing their plan, reflecting on the results and revising their construction, the students found the perfect angle for the PVC pipes that made their aquaponics model function. Students also used a chart to document the growth of their plants, gathering evidence to support their claim that aquaponics could be the future of farming.

Formative Assessment

Within an inquiry approach to teaching and learning, teachers are always looking for opportunities to understand how students are making sense of and applying concepts to real-world situations. Many traditional means of assessment (e.g., fill-in-the blank items, multiple-choice questions) require students to step out from the learning process. Documentation involves gathering evidence of student thinking as part of the inquiry investigation. Students make sense of the information they're gathering from reading, class discussions, hands-on experiences, field trips, and guest experts. They build models or simulations, create digital and physical representations, write plays or songs, design board games, and utilize other forms of representation. Teachers record this information and gather these classroom artifacts to evaluate student learning.

Beginning in the third year of the project, the research team recognized that this was a formative assessment process and wanted to explore more deeply the connection between documentation and formative assessment. To further their understanding, the team incorporated a book club as part of their monthly retreat. They read *Formative Assessment in Practice: Inquiry in Action* (Heritage, 2013). The teacher researchers selected a common definition of formative assessment as "a planned, ongoing process used by all students and teachers during learning and teaching to elicit and use evidence of student learning to improve student understanding of intended disciplinary learning outcomes and support students to become self-directed learners" (FAST-SCASS, 2018). The book as well as this definition informed conversations about the overlap between documentation and formative assessment.

In the classroom, teachers used documentation as evidence of student thinking to inform instruction. Notebooks, sketchbooks, student reflections, and learning walls helped teachers understand what students were learning as individuals and as a group, where misconceptions arose, and what students needed to progress in their understanding of content concepts. Teachers also used the information to guide the direction of the inquiry. Using pedagogical documentation as formative assessment opened the door for rich conversations about the study because students' ideas, voices, and interests were visible and honored. Where are the students' interests strongest? From student comments, where might the study go next? Are there "failures" that could help teachers and students gain a deeper understanding of a concept or universal idea?

Teachers understood that it was important to give students timely, actionable feedback toward the learning goals. They often co-constructed checklists or rubrics with students to be clear about these goals and expectations. When students wrote or recorded reflections, teachers responded by asking clarifying questions, eliciting more detailed responses, and asking about students' connection to the content area. They made sure the feedback was given relatively close in time to the learning experience, and they provided time for students to use the feedback to productively revise their work.

Students were part of the formative assessment process as well. After students became involved in documentation, the teacher researchers realized there was an opportunity to incorporate self and peer assessment. As described in the previous section, students regularly recorded their reflections related to learning and collaboration. Students' self-reflections allowed teachers to understand students' thinking in a way that they might not have been able to from the work products alone. Teachers gained insight into how students were drawing ideas from texts, class discussions, and in-class projects. Students' reflections were a commentary on their own thinking. They used documentation to see their own progress, reflect on their own understanding, and consider what steps they might take next. They also provided feedback to peers. Students shared their work with others in their collaborative teams or perhaps with other classmates for their comments and insights. Students began to learn to give constructive feedback. They also began to learn how to respond to feedback from peers and teachers and use it to refine and revise their work.

Documentation provides evidence that teachers can use to authentically assess students' thinking and learning in inquiry. This connection between documentation and formative assessment helps address the criticism that inquiry-based teaching and learning is difficult to assess. By linking documentation to assessment, the research team hopes to contribute to the ongoing conversation about assessment and student learning in the research and teaching communities. The research team will continue to explore how to assess students' deep conceptual thinking within the context of the learning process.

Building Community Through Teacher Action Research

Teachers believed that creating a team to systematically examine their practice, as researchers, would benefit UCLA Lab School. Often university researchers design projects that involve teachers and their students as study participants. In this case, teachers wanted to initiate a project, use research tools to study the innovation, and share their work with colleagues. They had a professional interest in documentation and ideas about how to adapt the practice for their context. They had read literature and professional texts about the benefits of documentation.

By assuming a researcher stance, lab school teachers could adapt and study the impact of this practice in their own classrooms. The teachers had a certain set of pedagogical tools to support student learning. They observed how students interacted with each other and how they used classroom resources. They took notes on students' ideas and questions. They met individually with students to confer about their progress and set goals. All of these pedagogical tools have a lot in common with qualitative research methods. By learning about qualitative methods of data collection and analysis, the research team expanded teachers' pedagogical tools and strategies for studying what happens in classrooms. For example, the team analyzed students' video and written reflections from group projects. At the Upper level, teachers coded the reflections using key words to describe students' understanding of the content area as well as their role as part of a classroom collaborative team.

Upper — Documentation, Reflection, and Songwriting

Upper students were charged with the task of starting their own band and writing an original song. They worked in groups to blend live vocal tracks and pre-recorded loops on Garageband into organized pieces of music. They had six weeks to complete this project, meeting every other day for thirty minutes. To ensure that the creative workload would be shared, each band member volunteered for certain tasks. However, teachers also wanted to emphasize the importance of collaboration. The class discussed that while musicians share their work by releasing polished recordings, the real story of the song is the musicians' journey in finding the inspiration and making connections with each other through the creation of the music. Students recorded their thinking and processes through the use of documentation reflection forms at the end of each songwriting session. By keeping track of the process, teachers wondered:

How might a documentation routine support students to develop the organizational and interpersonal skills needed in a collaborative songwriting process?

The research team created a Documentation Reflection form for students to use, which initially contained the following questions: "What did you do today?" "What went well?" "What could be done better?" We recognized that the students were a bit cursory with their answers, so we added, "How did you contribute to the group?" and "What happened today that sparked creativity?" Asking students how they contributed to the group gave them an opportunity to reflect on how their actions impacted the group's progress. Students recorded frustrations with disorganization and lack of group focus; they documented confidence when all members were being productive. Asking students to reflect more deeply on their own creative moments allowed them to keep track of their progress over time and collectively celebrate successes. Students often documented sparks of creativity by writing down the specific titles of loops that they wanted to include in their next session, going back to their notes to remember what they might have otherwise forgotten or missed.

Some groups used the documentation to help navigate differences of opinions when decisions needed to be made. One group found themselves in a disagreement about the lyrical content of their song. Their project was almost complete and they were about to record, when a group member, Casey, brought in a completely new set of lyrics. The lyrics were not relatable to the rest of the group, and nobody wanted to make the proposed changes. Casey was upset, but as the students looked over all of the collaborative notes from the previous weeks, she realized that it was best to move forward with the project as planned. Strong documentation allowed the group to ground themselves and make a democratic decision, rather than throw it all out and start again. (Continued on p. 19)

Upper — Documentation, Reflection, and Songwriting (continued)

Students also recognized the importance of documenting moments of inspiration. On a particularly productive day, one student's form documented, "We listened to a guitar loop and Jamie started singing lyrics." The student then documented the lyrics, which would inform their next songwriting session. Other students in the group recorded similar "a-ha" moments in regards to this successful breakthrough. That same day, another group member noted "We worked well together by communicating well. We need to be more organized." Documentation supported the students' work by helping them get more organized, which allowed them to build on the spark of creativity and grow their ideas.

Based on teachers' classroom observations and review of student work, it appears that students did benefit from the documentation routine. Teachers determined that the students' reflections supported their ability to work collaboratively and maintain motivation throughout the course of an extended creative project.

In the Early Childhood Level, teachers designed an observation tool that allowed them to gather data and keep track of the kinds of questions students were asking.

In addition to facilitating teachers' ability to look at their own classroom practice, the teacher action research created a space for teachers to collaborate and share within and across levels and curricular areas. By reflecting on their own practice, and sharing that reflection with colleagues, they cross-pollinated ideas and learned from colleagues at other levels. They realized that they could build on one another's work across the levels by articulating a continuum of practice: What does documentation and reflection look like for each age group of students?

The structure of the research project, with regular monthly meetings and weekly check-ins, helped teachers create peer accountability. Inquiry into documentation and assessment required teachers to create routines for documentation, make time for reflection, and have time to discuss what happened with teacher peers. Monthly retreats with all project participants were essential to building a community of practice.

By the third year of the project, teacher researchers began meeting weekly with their own grade levels. These meetings provided important opportunities for teachers in one level to support each other and problem-solve regularly about developments that arose in the project. Each week, grade level teams considered four questions about the use of documentation with their colleagues:

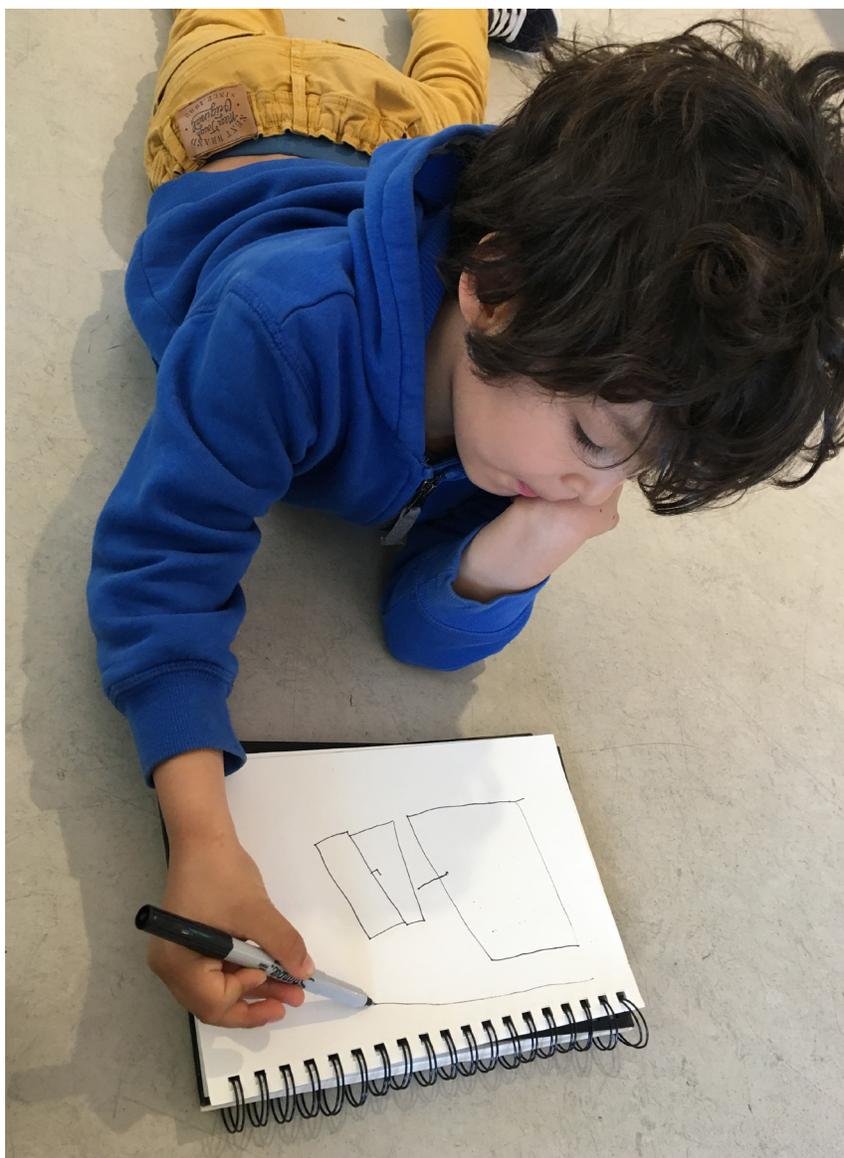
- What did you notice?
- What do you think it means?
- How is this informing your teaching?
- What questions do you have?

The questions helped structure the weekly team discussions about documentation and reflection. Teachers kept records of these discussions so that the information could be analyzed for patterns and changes in thinking over time.

By creating this community and building in accountability, the research team is developing a sustainable practice. The group began with eight teachers in the first year and in 2019 had 14 who were committed to continuing the practice and growing it further. The team is recruiting new members each year. Teacher researchers talk with colleagues across the school in grade-level meetings, staff meetings, and hallway conversations about how they and their students are using reflection and documentation in various curricular areas. An annual survey of all teachers was administered to understand how faculty beyond the action research team were using documentation and how the team could support the practice throughout the school. In the first year, the teacher research team organized professional development sessions for faculty. With a recent influx of new teachers, the team is considering reinitiating professional development sessions about documentation.

CONCLUSION

Over the first three years of the action research project, the teachers engaged in rich cross-level discussions, developed common language about pedagogical documentation, and thought deeply about instructional practice. They expanded their ideas about the purpose of documentation by examining the intersection between documentation and formative assessment. In so doing, the team learned about qualitative research methods which enhanced their ability to collect data that could inform and assess the teaching and learning in their classrooms. The team devised practices to integrate documentation in the regular classroom routines so that it was more authentic and intentional. There was compelling evidence that documentation was an important tool that supported students in developing a habit of reflection that stimulates curiosity and questions, enhances critical thinking, and deepens understanding.



The action research team plans to continue this work in the future with UCLA Lab School faculty. As other elementary school colleagues study pedagogical documentation, the team welcomes conversations about how they and their schools are adapting these practices to their own classrooms.

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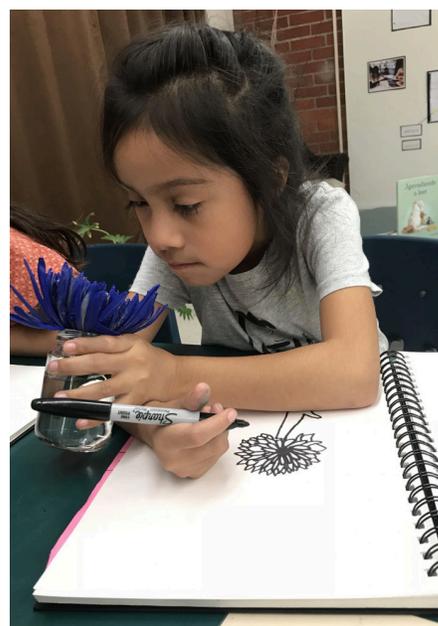
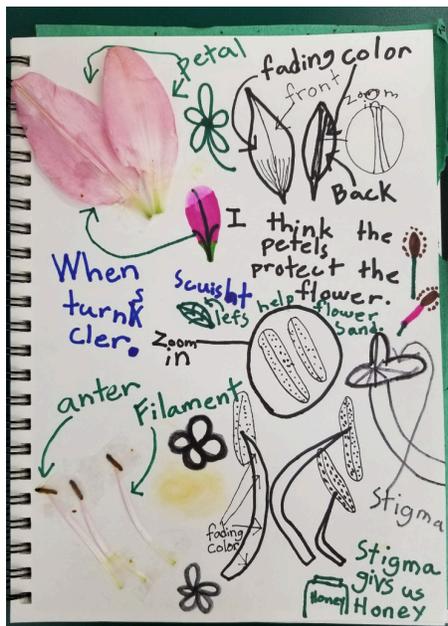
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