

## The use of Pedagogical Documentation Techniques to Create Focal Points in a School-University Partnership in Early Childhood Education: Technologies that Create a ‘Third Space’

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**Abstract:** In this paper, we examine the use of photo sharing technology in relation to the use of pedagogical documentation at a preschool that works in partnership with a university serving as a research laboratory and teacher training site. Using the theoretical framework of cultural-historical activity theory, we suggest that the photo sharing technology mediates the shared goals of enhancing children’s learning experiences, teacher education, and professional development by creating focal points and opening up a ‘third space’ in which children, their families, teachers, teacher educators, and pre-service teachers have access to localized information on pedagogy and practice. We describe the use of the technology, provide perspectives of stakeholders, and make recommendations for policy and practice.

**KEYWORDS:** early childhood education, pedagogical documentation, photo sharing, Professional Development Schools, teacher preparation, technology integration

### **NAPDS NINE ESSENTIALS ADDRESSED:**

1. A comprehensive mission that is broader in its outreach and scope than the mission of any partner and that furthers the education profession and its responsibility to advance equity within schools and, by potential extension, the broader community;
2. A school–university culture committed to the preparation of future educators that embraces their active engagement in the school community;
4. A shared commitment to innovative and reflective practice by all participants;
7. A structure that allows all participants a forum for ongoing governance, reflection, and collaboration; and
8. Work by college/university faculty and P–12 faculty in formal roles across institutional settings

Many have called for new forms of teacher education to bridge the gap between theory and practice, and to connect the multiple spaces in teacher preparation programs (National Council for the Accreditation of Teacher Education, 2010). In our program, the spaces take on different forms. The spaces are physical in nature, which include the university (teaching spaces for courses in teacher preparation in traditional university classrooms) and the university lab school (where children's learning and teacher's learning is happening simultaneously). The spaces are also psychological and philosophical in nature, where the ideas, goals, and actions of stakeholders are joined together for the purpose of the child and teacher learning. Teacher educators have long problematized the complexities and disconnect between university-based teacher education courses and field experiences. The past dichotomy between coursework and field experiences has led to a realization of the need for a common space in-between and overlapping field placement schools and universities (Feiman-Nemser, & Buchmann, 1985; Jónsdóttir, 2015; Lohmander, 2015; Martin, Snow, & Franklin Torrez, 2011; Zeichner, 2010).

The new 'hybrid' teacher educator works within a 'third space' to create a common ground between the teacher education program and placement sites for teacher education (Martin et al., 2011; Zeichner, 2010). This third space can be opened up by the use of technologies to provide stakeholders in early childhood teacher education (children, families, teachers, teacher educators, pre-service teachers, and the broader community) access to contextualized and localized information about the partnership school. Through enhanced observation and photo sharing technology, a platform is established for meaningful and current collaboration between the university teacher education courses and the life of the school related to children, their families, and staff.

In this paper, we describe photo sharing and pedagogical documentation as a promising practice that brings together a partnership between a university laboratory preschool serving children and families ages 2-5 years old, and a teacher education program at a major research-intensive university in the southeastern United States. Specifically, we put forward the idea that the technology of photo sharing aligned with pedagogical documentation can help bring together children, families, teachers, school administrators, university based teacher educators, and researchers in a 'third space.' In this third space, learning and knowledge can come together in ways that are democratic and less hierarchical (Zeichner, 2010). This is made possible through the distinct and intentional approaches we take to pedagogy and teacher education.

## **Literature Review**

Our review of literature provides the theoretical, historical and contemporary context for understanding pedagogic documentation as a pedagogy and a practice with roots in child observation. We discuss the connections between technology and pedagogic documentation techniques, and the concept of 'third space' as a contemporary approach to teacher education.

### **Documentation as a Pedagogy and Practice**

Pedagogic documentation can be thought of as an enhanced form of observation and has its roots in Freidrich Froebel's *Pedagogics of the Kindergarten* (1887). Close observation of children's holistic experiences and the use of these observations help us to gain a better understanding of the nature of young children's social, emotional, physical, intellectual, and

spiritual life. As early education became more commonplace and child development became a 'science,' common forms of child observation became more discrete rather than holistic (Reifel, 2011). During the early part of the 20<sup>th</sup> century, there remained advocates for holistic learning and sensitive observation of young children's broad experiences to enhance pedagogy, as demonstrated in the work of Margaret McMillan and Susan Isaacs (Giardello, 2014). These pioneers of early education and sensitive observation were working at a time when technology for observation was limited to the use of writing and sketches made by teachers while they worked alongside children.

Observation of children and the use of documentation for the purpose of pedagogic enhancement were strengthened in the latter part of the 20<sup>th</sup> century, most notably by the inspirational practices of municipal schools of Reggio Emilia in Italy (Edwards, Gandini, & Forman, 1993, 1998; New, 1993) and Project Approach in the United States (Helm & Katz, 2011). Practices of pedagogic documentation in the 1990s and 2000s have become enriched by technologies, such as still and moving digital photography, computer software, and online photo sharing applications. Recent photographic and text-based technologies have enabled educators to easily share documentation and readily provide direct access to young children and their learning experiences.

In the past, the process of documenting pedagogy with photography and narrative writing involved developing photographs from film before writing narratives by hand or with a word processor. With the evolution of technology, we can now easily capture digital images using portable devices linked to readily accessible word processing programs. When this documentation is used to its full potential, children are active participants in the process and a platform is created for teachers to learn and share with stakeholders.

Pedagogic documentation is rooted in the spirit of collaborative and transparent inquiry, and is thought to create a space for democratic participation (Abramson, 2008; Dahlberg, Moss, & Pence, 2006; Kline, 2008; Kroeger & Cardy, 2006). The process of documentation makes learning visible while bringing transparency to the art of teaching. This is particularly important in play and project based preschool environments, due to the nature of child-initiated and free-flowing learning experiences that transpire in the everyday life of the classroom. With an emphasis on collaboration and co-inquiry in a fluid environment, photographic technologies can greatly enhance the ability of the learning community to reflect, analyze, and disseminate learning. Furthermore, pedagogical documentation techniques can enhance the links between university-based teacher education programs and school practicum experiences by providing current and contextualized information about what is going on in schools (Flannery Quinn & Parker, 2016).

### **Connecting Pedagogical Documentation and Technology**

The use of technology for documentation provides an opportunity to enhance the professional development of in-service and pre-service teachers, by serving as a connection between the school setting and the teacher training institution (Flannery Quinn & Parker, 2016). Pedagogic documentation with the use of photo sharing and narrative writing technologies can enhance innovative classroom practices and help pre-service teachers to see, share, and debate how educational theories translate to practice.

Modern digital photography, including video, is a powerful technology in learning contexts because it offers increased accessibility. This media offers multiple means of representation and serves as an outlet for engagement with young learners, which are principles of Universal Design

for Learning (UDL). UDL fosters equity by providing educational experiences to learners with varied interests and abilities (Hall, Meyer, & Rose, 2012; National Centre on UDL; 2016; Rose & Meyer, 2002). This is an issue of relevance and concern in early childhood education and teacher preparation.

Research on the use of photography with young children shows that photographs give children opportunities to elicit thought and memory, particularly when children are involved in making the images (Clark, 2005; Clark & Moss, 2001; DeMarie, McLain, Mockenstrum & Stevenson, 2015). Through collaborative dialogue with adults, photographs can give preschool children prompts for discussions about thoughts and feelings. When in-service teachers and pre-service teachers use photographs of learning experiences with children, they reflect upon, discuss, and analyze concrete and contextualized learning experiences. This is a meaningful practice in teacher education programs, one that brings the early years classroom into the university by opening up a ‘third space’ for teacher educators and schools to work toward shared goals in teacher development.

The ‘third space’ is a shared, boundary spanning physical or virtual place for dialogue, reflection, connection, and learning. In teacher education, this could be a place where teacher educators, supervisors, and pre-service teachers bridge theory and practice when they “integrate competing forms of knowledge and discourse” across traditional spaces (Cuenca, Schmeichel, Butler, Dinkelman, & Nicholas, 2011, p. 1069). It could also be a space to address binaries by creating a place for reflection and renewal that leads to change in the traditional spaces of teacher education (Flessner, 2014). Another perspective defines third space in a virtual sense, where people inhabit both physical and remote spaces, creating a way for others to enter into and participate asynchronously (Packer, 2005). We interpret this third space as a place where learning and knowledge come together between the school and university teacher education program to bridge research and practice.

Research on the use of photographic technologies by in-service and pre-service teachers engaging in pedagogical documentation shows these technologies to be relevant and successful platforms for learning, particularly when used in collaborative learning groups (Davies & Head, 2010; Edwards et al., 2007; Flannery Quinn & Palser, under review; Flannery Quinn & Parker, 2016; Flannery Quinn & Schwartz, 2011; Hong & Trepanier-Street, 2004; Lemon, 2007; Moran & Tegano, 2005). Photographic images, whether still or video, have been found to provide something different from the standard written observations, particularly those conducted by pre-service teachers in early childhood programs. Photographic documentation serves as a prompt for discussion and sharing in university-based courses, where pre-service teachers can share their school experiences with fellow students and professors (Flannery Quinn & Palser, under review; Flannery Quinn & Parker, 2016). Moran and Tegano (2005) also highlight photographic technologies as a means for developing visual literacy for young children.

Pedagogical documentation techniques often involve narrative writing and there are a wide range of formats that narratives can take. A narrative can range from a brief description of content to a detailed story of the learning experiences and its relation to theories or curriculum intentions. Narratives that are constructed as part of pedagogical documentation are intended to provoke thought as well as invite questioning and dialogue. When narrative documentation accompanies photographs, videos, and work samples, it can contextualize learning and inquiry for pre-service teachers. The range of documentation allows for multiple modes of communication between pre-service teachers and collaborating teachers as they develop an understanding of theory and practice.

It also provides a pedagogic space aligning pre-service teachers, collaborating teachers, the partnership school, and university faculty to problematize and analyze practice. This process helps to enable the development of a critical consciousness of teaching and learning (O'Loughlin, 2016).

### **Enhancing Partnerships Through Pedagogical Documentation**

We suggest that pedagogical documentation is a means for strengthening school-university partnerships because it involves a multifaceted, layered approach. It has benefits for all learners because it is contextualized in the teaching and learning experience of the school placement, rather than in abstract and disconnected case studies. It provides a layer of personalization to the learning experience, as called for by the Office of Educational Technology National Educational Technology Plan (2016). When pre-service teachers choose meaningful moments to document, this attends to their needs and interests. Pedagogical documentation also provides an opportunity for the pre-service teachers to enhance the holistic experiences of the children in schools by bringing reflective practice into their learning experiences. Both the pre-service teacher and the child can use the documentation to look back on learning experiences and explore them further.

Pedagogic documentation allows university faculty to better understand the experiences of their school-based partners, while also creating a space for this partnership to become visible at the university. With the use of technology, links between schools and universities can be strengthened. While there have been empirical studies of the use of pedagogical documentation, none have specifically addressed the use of technology in relation to school-university partnerships. Our work, which describes this promising practice, is a starting point for sharing ideas and research into the effectiveness of these techniques more broadly.

### **Theoretical Framework**

Cultural historical activity theory (CHAT) (Cole & Engeström, 1997; Douglas & Ellis, 2010) is a useful framework to consider how technology can create and support a 'third space' where schools and universities engage in partnerships (Bhabba, 1990; Cochran-Smith & Lytle, 1999; Zeichner, 2010). Cultural-historical activity theory has roots in Vygotsky's (1986) concept of the human experience as mediated by tools of culture. Vygotsky's theory places language as a central mediating tool and as a primary basis for shared thoughts and collective activity. In this theoretical tradition, thoughts and ideas are never individual or solitary; instead, they come from culture, communicated through the symbols of 'languages' that include verbal, gestural, and visual modes. The sharing of ideas is situated within an ecology, or a system of shared space (physical or cognitive) and time, within learning situations. This requires what Bodrova and Leong (2001) have called an 'orienting basis of action' to guide individuals to attend to what is meaningful and relevant. In order to bring two or more people together as they orient themselves toward an action, tools such as language (in spoken, written, or visual form) can be used to mediate the links between cultural-historical processes and individuals' psychological and cognitive processes (Wertsch, 2007). This work applies this theoretical framework to conceptualize the use of technologies that support pedagogical documentation as a mediating tool. This technological tool provides a 'focal point' for shared communication and action to enhance both children's learning as well as holistic experiences that further support teacher education.

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## Context

### Laboratory Preschool

The University of South Florida Preschool for Creative Learning (PCL) is located on the campus of the University of South Florida (USF) and has been in existence for over 25 years. The PCL services approximately 76 children (ages two through five) from diverse cultural and linguistic backgrounds. The majority of the families are graduate students and faculty at the university that currently represent 16 nationalities. The PCL is a voluntary pre-kindergarten provider for the state of Florida, which provides a subsidy to all four year olds enrolled in the school. Additionally, the school accepts school readiness vouchers, a form of subsidized tuition provided to low income families. The school currently supports 15 children on this state funded program. The vision of the USF PCL is to exemplify an inquiry approach to teaching and learning by innovating and improving early childhood education through teacher education, research, and community engagement.

### Teachers

The core faculty of the PCL is made up of nine teachers in five classrooms. The minimum requirements for the lead teachers is a bachelor's degree in early childhood education and several hold or are working toward advanced degrees. Most of the assistant teachers at the school hold a bachelor's degree in early childhood education or have a Child Development Associate (CDA) credential with a minimum of five years of teaching experience. There is a commitment to and an expectation of continued education and professional development through teacher inquiry for the staff at the school. All lead teachers are expected to mentor and serve as collaborating teachers to pre-service teachers at the university. Additionally, teachers engage in annual inquiry projects with the guidance of the director and university faculty. This commitment is supported by the partnership with USF through tuition bursaries for staff and through a shared commitment to the preparation of future educators, a feature essential to partnerships in professional development schools (NAPDS, 2008).

### University Faculty

The faculty in early childhood education at the USF work closely with the PCL in a range of roles. Three tenured faculty members engage in research and teaching at the undergraduate and graduate levels, and one affiliated faculty member is involved in teaching, supervision, research, and serves as the Director of the PCL. The partnership between USF's early childhood education faculty and the PCL is further supported by two doctoral candidates, whose graduate assistantship roles include serving as (1) a liaison between the early childhood education program and the PCL, and (2) a technology liaison to provide technical assistance onsite. The faculty members and graduate assistants work closely with teachers at the PCL, providing regular professional development.

## Partnership

The PCL has a strong partnership characterized by a shared commitment to innovative and reflective practice, research and inquiry, and a shared responsibility for educating children. The preschool, in partnership with the university, has developed a structure that allows participants a forum for reflection and collaboration that involves faculty in formal roles (NAPDS, 2008). This forum has been entwined with the PCL's implementation of Project Approach (Helm & Katz, 2011) and pedagogical documentation (Edwards et al., 1998; Katz, 1996; Turner & Wilson, 2009).

The preschool operates as part of an ongoing university partnership where pre-service teachers complete internship experiences and research is conducted. This partnership has multiple facets and the USF College of Education provides several services to the school. The primary assistance from the university includes providing a presence at the school in order to ensure exemplary early childhood education practices.

Professional development is central to the partnership work. USF created a graduate assistantship so that a graduate student may work as a part-time lead teacher in the state-funded pre-kindergarten classroom. This reflects the value placed upon school-based practitioner research. In addition, the partnership has an appointed faculty member in the USF College of Education to serve in a liaison role of professor in residence in addition to a graduate assistant who serves as preschool liaison. The liaisons assist the director in areas of need that are ever changing. Both liaisons provide professional development to the teaching assistants and lead teachers at the school.

Recently, this partnership has been strengthened through the use of technologies that enable professional reflection, collaboration, and contextualized understandings of children's experiences related to pedagogy and teacher preparation. The photo documentation applications used on portable touch screen tablets, allow stakeholders to share documentation related to children's learning and teacher pedagogy. This supports the learning experiences of young children while also enhancing teacher preparation and professional development at the school.

### **Technology with Pedagogical Documentation at the PCL**

The PCL recently began using a new technology developed by Kaymbu, a software company offering an integrated solution for creating, storing, and sharing portfolio documentation of student work. Kaymbu provided each teacher at the PCL an iPad loaded with the software for daily documentation. The use of Kaymbu on the iPad eases the process of documentation in the classroom because of its portability. It simplifies the process of capturing images, writing comments, linking to standards, and sharing documentation.

When working with young children, learning may occur in any situation throughout the day. Children demonstrate knowledge and expertise through conversations with peers and teachers, playing both in and out of the classroom, interacting at lunchtime, engaging in learning centers, participating in lessons, and many other opportunities throughout the day. Kaymbu provides a seamless outlet to capture these moments in all learning contexts. Instead of focusing only on capturing moments during instruction, the software allows us to capture spontaneous learning experiences throughout the day.

The software facilitates collaboration between PCL teachers and pre-service teachers. As such, it is a mediating technology that helps mentors and novices to engage in the cultural activity

of learning to teach. While pre-service teachers are learning how to use the software, their mentor teachers model appropriate ways to authentically assess children and engage in effective conversations about teaching practices. Mentor teachers have the opportunity to assess pre-service teachers by revisiting moments they have captured and contributing constructive feedback. This process enhances the partnership between the teacher education program and the PCL. Mentor teachers are given both an entry point into the ‘third space’ (between the university program and the school) and a focal point on which they are able to reflect-on-action and reflect while in-action.

Another advantage of the software is the functionality of linking children’s representations of learning with teaching standards. When linking these moments with standards, teachers are making learning visible to all and it assists teachers in understanding how children are performing according to curriculum standards. The captured learning experiences can be tagged to standards by pre-service or in-service teachers and organized by moments related to curriculum and alternative indexing. This versatility allows stakeholders to go beyond curriculum standards and make links to richer, more meaningful interpretations of children’s holistic experiences in a range of areas.

The ability to share moments through the software amplifies the access that children, families, and colleagues have to documentation, and it gives an entry point into the ‘third space’ of the school-university partnership. Moments can be shared by sending emails, creating storyboards, and passing along portfolios of children to other teachers. Using the software, teachers have the ability to send emails to parents to showcase remarkable events that happened during the day, and this quick communication has a great impact on parents’ involvement and sense of belonging at the school. Kaymbu also provides teachers with the opportunity to exchange messages about a child’s individual achievements or to send a quick note.

In relation to the classroom community, it is possible to create storyboards to showcase projects that are happening in the classroom, including anecdotal notes, narratives, learning domains, and important upcoming dates and events. Storyboards communicate the highlights to parents who can then initiate conversations with their children using more specific information about what was happening at school. This use of technology mediates child and family participation in the shared activities of school.

The use of the photo documentation software also informs colleagues about the activities across the school and opens opportunities for professional exchange among teachers. Another important feature of this software is that it allows teachers to send children’s portfolios to their future teacher, thus supporting the collection of evidence of students’ improvement, skills, and attributes.

### **Stakeholder Perspectives**

In order to examine the use of technology in photo sharing and pedagogical documentation as a promising practice, we called together a working group of stakeholders that represented PCL teachers, teacher educators, a researcher, the school administrator, and families of children at PCL. To address the role of technology in a ‘third space,’ where knowledge is shared in a democratic atmosphere rather than a hierarchical one, we asked a representative from each of the stakeholder groups to share their perspective and write a narrative that would illustrate their engagement with the technology. Each of the stakeholders discussed their ideas and prepared a written narrative to be included in this paper and all stakeholders who participated in the writing are named authors in



the paper. Once the narratives were assembled, the stakeholders continued to discuss the overall concepts of technology as a mediating tool in the school-university partnership, and contributed to writing the discussion and recommendations. The following section includes these stakeholder narratives.

*A teacher's perspective:*

*As a preschool teacher, assessing the whole child is a vital part of my practice. Young children demonstrate their learning through different ways, and it is up to me to be perceptive about how and when they are showcasing their skills and knowledge. I believe the best way for young children to meaningfully engage in learning experiences is through play, and so it is during this time that I can best assess their learning acquisition.*

*The use of the Kaymbu assists me with the documentation of children's learning through the use of photography. When using the software to capture moments, I am able to write detailed narratives, anecdotal notes, and describe skills demonstrated. It also gives me the opportunity to tag the photos to an individual student's portfolio, specific teaching standards, and organize children's work collection overtime, which helps me to better visualize where children are at and where they should go.*

*Once these documentations are created, they are automatically shared with my co-teacher and the director of the preschool. This ability to share simultaneously gives them the capacity to be a part of what is happening in the classroom and engage in deeper conversations. When we meet for planning and professional development everyone is on the same page. Moreover, we are able to have high-level conversations, critically reflect about students' improvement, and intentionally plan for the upcoming week.*

*The software also assists my role as a mentor teacher. While I'm using the tool in the classroom, I am modeling for pre-service teachers how we authentically assess young children by collecting documentation. The easy use of the software makes it clearer for pre-service teachers to understand the importance and process of documentation. They are encouraged to use it to collect and learn about their practices and children's growth. Also, it is a great way to showcase their own progression as documentaries and for me to give appropriate feedback.*

***A teacher educator's perspective:***

*As teacher educators, the use of a digital documentation tool has provided us with a way to help facilitate theory to practice connections in coursework, while helping us stay connected to practices and events occurring in the classroom. We found it to be an efficient and effective way to provide feedback and support, in person and virtually. The use of photographs, commentary, and tagging makes thinking and learning visible, while serving as a tool for reflection. In the field, we noticed in-service teachers documenting student learning and sharing their thinking with pre-service teachers. They served as a model for documentation practices while concurrently supporting coursework. Furthermore, they demonstrated the use of a digital tool for multiple, authentic purposes. We observed pre-service teachers using the storyboards and photos to reflect on events and practices they were observing. Through reflection, they were beginning to make connections to course content and theory. This helped us extend the learning and blur the lines between coursework and field experiences. Moreover, we could modify course content based on what we were seeing and hearing to make deeper and more practical connections.*

*As teachers and pre-service teachers became more confident with the tool, we began to notice more complex documentation and reflective practices. As we became efficient with the tool and process, we recognized additional affordances. For example, the digital documentation format gave us an opportunity to archive and curate a vast number of experiences. At the same time, it served as an accountability tool, as we were collecting evidence of teacher learning and development and documenting their growth. It also gave us a chance to examine teachers' decision-making processes to analyze what they were documenting and how were they explaining their decisions.*

**Child and Family Perspectives**

In an effort to connect the classroom space to families, each family was asked to send in a family photograph at the beginning of the school year. These photographs served as a source of comfort to children who were struggling with the transition to school by providing a visual link to the people who love and care for them. In a similar fashion, the use of photographic documentation creates a link, allowing the social relationships that are formed in the classroom to be shared and supported at home.

**A child's perspective:**

*Amy is currently in the 2.5-3 year old class at the PCL. From the first days of school, Amy's teacher began to send home brief summaries of*

*what transpired in the classroom at least once a week. At home, looking at these pictures with her family, Amy was able to talk about the connections she made with peers at school using the images to tell about the activities she engaged in. She takes pride in being able to narrate the highlights of her day and share them with other important people in her life, much the way she felt comforted by being able to locate her family within the space of her classroom and connect those elements of her life.*

### **A parent's perspective:**

*Like many parents, I am eager to hear about my child's day at school when I pick her up. While I often hear about playing outside or in a favorite learning center, my child is still developing the language skills to able to expand upon what she did in school without some contextual supports. The use of photographic documentation helps to breakdown this communication barrier in several ways. Often, an e-mail or text message will arrive while my child is at school. Having a sort of sneak peak into what's happening at my child's school gives me some prompts to use when discussing the day's events as we travel home. The ability for the teacher to easily share these moments in my child's life while I am away from her both keeps me connected to what's happening at the school and provides resource we can use later in conversation to support conversations about school.*

*The pictures generally come back out when we have the opportunity to sit together and look back at the messages sent by the teacher. The descriptors provided by the teacher act as conversation starters about my child's school experiences. Often she has thoughts to share about what was happening in the image and how she felt about it. These conversations often start at the image and then go beyond the moment captured by the teacher into connected experiences. Being able to extend our conversations through visual images has allowed for deeper, more meaningful conversation. Understanding the ways my child is interacting with new knowledge and being able to see the kinds of tasks she is engaged in also allows me to build off of that learning in our home environment.*

*The connectivity between home and school created by the use of digital photography and electronic documentation has allowed my child's teacher to include me in observations of my daughter. The description and image together create a powerful tool for understanding not only the skills my child is working on but the ways in which she is practicing them at school. The images provide powerful commentary on the ways through which my daughter is coming to understand the world around*

*her and allow me to make meaning of ideas she is not yet able to fully communicate. This support extends beyond the moment we look at the documentation shared between school and home into our lives through connections to learning experiences that arise in everyday life.*

### **A program administrator's perspective:**

*Technology can be an expensive investment for any program, and care should be taken in choosing the proper one for a school's uses and needs. At the PCL, I chose the documentation software based on its compatibility with an everyday tablet. This way, the children or teachers could use the tablet for multiple purposes. Portability was also an important consideration when I was looking for technology. I wanted to be sure we could collect data anywhere in the school and on field visits, and that the data could be shared across pedagogic spaces (within the school, with families, and with teacher educators at the university).*

*New technologies and new practices require on-going job embedded professional development. At the PCL, the teachers were given the tablets initially to only explore and play. After the initial explore phase, they eased into documentation by taking photos of children and children's work. As time passed, the teachers began tagging standards with the children's work samples. I had one teacher meet weekly with our technology liaison to gain a deeper understanding of the software and how it could be used in the classroom for collecting work samples, as well as a tool for inquiry and reflection. She then became our teacher expert, who in turn supported other teachers in the school to utilize the software. Once the teachers had a feel for the software and all the capabilities for use inside and outside of the classroom, we began expanding our use of the Kaymbu as a data source for teacher inquiry, pre-service teacher development, and a primary communication tool for parents.*

*As teachers became efficient with how to utilize the software for classroom documentation and teacher inquiry, we extended our use as an additional tool to connect the university and preschool partnership. It took all of us at the PCL about one semester to attain a comfortable working knowledge of the Kaymbu. This included the ability to document and write about childrens' project work and to maintain electronic portfolios for each child. Teachers began to share their work with families and partners via weekly sheets of classroom life. As the teachers learned, I learned along with them with my own iPad. Rather than early learning standards, my Kaymbu account included the Florida Educator Accomplished Practices (FEAP's). While teachers were using the software as a data collection tool for children, I was using the same*

*technology to supervise pre-service teachers in their final level of internship. This information was then shared with the faculty and other stakeholders of the program.*

*A school culture that embraces technology and an inquiry stance is critical. The role of documentation as a platform for teacher learning should be valued and considered part of everyday teaching practice. The importance of pedagogical documentation is evident in PCL through the time created in the week for teachers to view, reflect, share, plan, and write about their artifacts. Directors and liaisons have an important role to facilitate these meetings and to provide support and mentorship for teacher inquiry and learning.*

*As the director, I had to carefully consider the ethics in relation to the use of technology and children's photographic images. Images provide a unique form of documentation that can be difficult to match in observational notes alone. However, the use of images, particularly across contexts, brings with it several important ethical considerations, such as storage, permissions, and photo sharing. To protect children, we agreed images would be stored on password-secured devices, as well as a password-protected site. These documents were available only to teachers at the school, administrators, and faculty of the university affiliated with the preschool. Classroom pre-service teachers had access to viewing photos; however, they were not permitted access outside of the school or without lead teacher supervision. When parents enroll in the program, multiple levels of photo releases are signed. Photos for documentation, photos to share among families, and photos for public dissemination all have individual releases.*

*At the PCL, ethical considerations go beyond permissions and are incorporated into the pedagogy of the project approach and pedagogical documentation, where children take an active part in using cameras and discussing their projects. There is a dedication to respecting children's agency by asking for permission to take photographs at the point of taking them, and encouraging children to take similar approach.*

#### **A pedagogic researcher's perspective:**

*I have been involved in a pedagogical research projects in partnership with the PCL for several years, initially, in my role as a teacher educator and supervisor of pre-service teachers from 2003 to 2009, and more recently, as a visiting researcher developing a project on incorporating children's perspectives in pedagogical documentation. In the early days of my work with the PCL, we would make photographs for pedagogical documentation with disposable cameras, and develop them at the local*

*photo shop later in the day, and have paper copies of these documents ready for discussions and sharing, often days after. These photos were shared with children and displayed at the school, and sometimes were photocopied to be included in newsletters for families. Photographs would also be used in child portfolios that were shared with families at the end of the semester or the end of the year. The photos were also used in lecture sessions with pre-services teachers to generate dialogue about pedagogy and practice. The use of paper photographs made from disposable cameras involved a lot of time and cost, and did not result in materials that were easy to share with groups of people. It was a particular challenge to engage children in dialogues about the photographs and the activities in a manner that could be meaningful to them.*

*With advances in technology, particularly digital photography and programs that enabled display of the photographs with narrative writing (such as slideshow programs), we began to be able to share the photos more easily and we were able to add written narratives in companion to the photos in one document. This enabled greater access for more people (children, parents, pre-service teachers, and colleagues) and provided the ability to discuss the photographs and record narratives in a more timely manner. We began to use the photographs and narratives as a tool of inquiry in a way that provided ecological validity (children in the context of their school) and gave visibility to the experiences of children in a preschool setting. This enabled a stronger connection between the university and the pre-school, but still the process involved challenges. Particularly challenges associated with the time needed to fulfill the roles associated with university teaching and research, and the role of making meaningful connections with a partner school. I did not find the technology available at the time helped to facilitate sustained engagement in research projects.*

*More recently, with the development of photo sharing applications used on tablets with indexing capabilities, the possibilities for meaningful research and inquiry that is based on the concerns of the children, their families, and the teachers at the school have been opened up. My experience engaging in inquiry with the children and the teachers at the school using the tablet allows children to take photographs and share stories about what is meaningful to them at that moment. The preschool environment is characterized by play and activities that move swiftly, the tablet allows children to have their hands and their voices heard within the action. This has enabled me, as a pedagogic researcher to think of new ways to engage in participatory research. However, it is not the technology itself that enabled this to happen - it is the committed desires of the teachers and their director to be a partner school that is*

*dedicated to inquiry that guides their practice. This is essential. The technology, as a tool, allows this to happen in ways that they deem appropriate.*

### **Discussion and Recommendations: Shared Focal Points in School-University Partnerships**

Through the perspectives of the stakeholders in a school-university partnership, we see that the use of photo sharing and pedagogical documentation technology can provide focal points for a democratic partnership space, where knowledge can be shared from multiple perspectives. The focal points are related to the 'connections' articulated by the stakeholders: (a) the ability to share information simultaneously across the partnership, the ability to see practice in action, (b) the ability to think of research in relation to participatory approaches with children, and (c) the ability to provide families and their children with prompts for conversations about their experiences in school. By enabling connections rather than giving more or less power to one of the stakeholders in the partnership, we believe this promising practice serves to open up a democratic 'third space' in a school-university partnership, with lessons that could be learned by other schools or universities seeking to strengthen their partnerships.

When adopting photo sharing technology for use with pedagogic documentation, a culture of commitment to these new practices must be built over time. There should be active job-embedded professional development where regular time and space for reflection and discussion between all stakeholders is part of the process. This established culture should involve university faculty and administration, with dedicated time for faculty to join in the professional development of the partner school. Universities must also cultivate a disposition to the value of research taking place at partner schools, which is often action-oriented practitioner research. There are practical considerations with regard to the use of the technology, as articulated in the perspective of the program director in our study. We recommend that the investment in technology be considered with regard to cost and portability of the devices, and most importantly, the ease of access for children and families.

In order for this type of software to be utilized to inform practice and as a partnership tool, a strategic plan and time investment had to be in place. For any technology to be successful in the classroom, there must be significant buy-in from the administration of the program and from the users of the technology. Technology is often purchased for school use without the proper supports in place, and this can lead to ineffective use of the technology and a waste of resources. Time must also be specifically allotted for situated professional development in the use of the technology. Teachers need to learn the technology and then practice using the technology within the context of their classroom (Ertmer & Ottenbreit-Leftwich, 2010; Kopcha, 2012). Technology, as a mediating tool of the activity in the school, must be accessible and manageable for the users, and must meet a genuine need within the school culture.

There are many benefits to the use of pedagogical documentation, but also several challenges that must be considered. Both novice and experienced teachers may find documentation to be a challenge in relation to time constraints and the overriding priorities of teaching and running the classroom (management). There is a legitimate concern that taking photographs or video clips and writing narratives is a labor-intensive endeavor. If not managed properly it could detract from teachers being present with and available for children in a preschool learning environment. There is also a concern that documentation through photographic technologies could become an invasive

practice with regard to children's privacy, and may even lead to 'normalizing' particular childhood experiences (Flannery Quinn and Manning, 2013; Lindgren, 2012). Therefore, care must be taken to uphold and respect children's privacy by all stakeholders involved. There are additional challenges associated with introducing pedagogical documentation techniques in teacher education programs, particularly when the practice may not be in place in schools (Kroeger & Cardy, 2006). This makes a strong university-school partnership particularly important.

When using photographic technologies and pedagogical documentation techniques in early learning environments, it is recommended that consideration be given to a range of ethical issues, including but not limited to: (a) what is or is not photographed, (b) permission from families to make and use photographs, (c) permission from children and staff who are photographed to make and use the photographs, and (d) collaboration in the process of writing observational narratives. Photographs and narrative observations can often contain personal information and should be treated with respect and dignity (Flannery Quinn & Manning, 2013). The Office of Educational Technology, National Educational Technology Plan (2016) calls for a thoughtful use of technology. Ethical considerations and thoughtful approaches should be a component of the school-university partnership, with regular discussion about the implications of using technology with young children and in teacher education.

### **Conclusion**

The emerging picture at our partnership lab school demonstrates how technology can enhance pedagogical documentation techniques and create a 'third space' for the shared goals of enhancing children's experiences at school, involving families in school experiences as well as providing exemplary teacher education and professional development. The application's indexing capabilities help stakeholders in the school-university partnership focus on how children experience school and how pedagogy is developed in practice at a partnership school. Shared focal points strengthen the school-university partnership by enabling the flow of information between multiple partners. This allows each stakeholder to have access to a pedagogical space where they can see, reflect upon, and take actions regarding theory in practice in the local dynamic environments of the school and the university.

The technology presented has the potential to enable strengthened school-university partnerships by providing a resource for research and inquiry in early childhood education and teacher education, and by providing naturalistic data that can help us better understand how pedagogy is developed through practice. This technology gives greater access to inquiry for teachers and pre-service teachers, and will enable the broader community access to teacher research based on children's lived experiences.

One of the most promising aspects of this technology is the connection it facilitates with families, who are often a missing piece in research and practice in teacher education (Epstein, 1995; 2001, Epstein & Sanders, 2006; Greenwood & Hickman, 1991). We suggest the technology allows families to have immediate access to information about their children's school experiences and invites their participation in dialogues about these experiences. This provides another focal point for the school-university partnership, which has potential to increase family and community engagement, and provides a pathway for parents to enter that 'third space' where schools and universities engage in the shared activities of children's and teachers' education.



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