Using Video to Enhance Observational Assessment

Technology can support developmentally appropriate assessment practices for young children.

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"What letter is this?" the teacher asks. The child responds, "C," looking at the teacher to see her response. When she does not draw a slash through the letter, the child knows he has missed it again. "G," the child corrects himself, but it is too late. Looking disheartened, he attempts the next letter but misses it also. A downward spiral of missed letters affects the child's focus during the testing session. As the teacher hurriedly documents the assessment, the child asks, "Can I go play now?" The teacher responds, "In a few minutes we will be done."

With the current emphasis on accountability, the manner in which teachers assess has involved scoring children on specific criteria as they attempt to satisfy the requirements of outside funding agencies, state mandated assessments, or local assessment decisions. One study showed that teachers face difficult challenges and no longer fit the role of "master observers" (Schultz, Kagan, & Shore, 2013). Research by Carlsson-Paige, McLaughlin & Almon (2015) identified challenges related to how families of kindergartners have been questioned about their children's Pre-K being too play-based, and the children labeled as "behind" when school began. Carlsson-Paige et al. (2015) noted that the primary problem with assessment today is due to the implementation of the Core Curriculum and the subsequent increased emphasis on academics in the younger grades. According to this research, the influence of the Core Curriculum has increased the number of worksheets and whole group activities while also adding inappropriate methods of assessment.

Both Carlsson-Paige et al. (2015) and Schultz, Kagan, and Shore (2013) valued observation as an appropriate method for assessing young children, even though alternative forms of assessment are being implemented. In this article we present a case study of a teacher engaged in developmentally appropriate assessment practices through the use of technology, specifically video.

Technology Tools in Appropriate Assessment

The use of technology in assessment has provided many new tools to assist the teacher. One improvement in technology involves additional ways to store observations. For example, computer applications allow teachers to record observations digitally through anecdotal record software. According to Bates (2013), anecdotal records can be documented digitally using applications uploaded to laptops or notebooks for safekeeping. Bates identified Evernote, Notability, and Paper Desk as examples of applications for recording anecdotal records digitally. Moreover, recording information through an electronic pen provides teachers additional avenues to develop a more inclusive assessment method. Livescribe (2015) uses a ballpoint pen to preserve audio recordings for listening and reviewing later. Handwritten notes created with the pen can also be transferred to the computer for storage. Additionally, the application Pear Note (2013) provides areas to save video files and anecdotal notes, thereby allowing teachers to locate all the documents in one application.

Another method for storing observational audio and video files for assessments occurs in electronic portfolios or E- Portfolios. E-portfolios provide electronic storage of how a child progresses over time (Mindes & Jung, 2015). The child's portfolio includes teacher observations, child work (drawings, paintings, graphs, stories, writing), as well as video and audio recordings of the child playing, talking, and interacting. Using video as one form of documentation within the E-portfolio system allows for sharing with other professionals who also care for the child (Mindes & Jung).

The assessment program Teaching Strategies GOLD (2015) allows for integrating E-portfolios, using video

along with many other forms of documentation. This assessment system was analyzed by Kim, Lambert and Burts (2013) to determine its validity for English Language Learners and children with special needs. Kim et al. concluded that the program provides a valid method for teachers to assess culturally, linguistically, and ethnically diverse children equitably. This is one of many E-Portfolio systems available for teachers.

The innovations of Teaching Strategies GOLD (2015), Livescribe (2015) and Pear Note (2013) provide teachers with new options for including observational assessment. However, it is important to understand how using this technology assists teachers amid the many assessments they are called to administer. Ruble, McGrew, Toland, Dalrymple, and Jung (2013) studied how teachers used web- based technology to observe children with autism and improve their education. Using video-conferencing, teachers and consultants worked collaboratively to provide better services for the individual needs of young children. Consultants viewed the video of children with special needs then came together to develop individual plans for the children's success.

Suarez and Daniels (2009) similarly used digital video to document and store information regarding language delay. Employing the assessment philosophy of Reggio Emilio within a case-study format, Suarez and Daniels studied the language development of twin boys for three years using video/audio, digital images, and written observations all compiled into a DVD. Using technology and the systematic observations of the child's language, consultants and teachers discussed strategies to develop the language of the twins. Sammuelsson and Plerjert (2015) concurred with this study after using video to analyze children with language impairment. The study found that video allowed professionals to rewind and review children's communications. Repeated review revealed children's needs and gaps in skills development, and helped staff select appropriate methods to improve the children's language.

Therefore, the research confirms how video observation has assisted teachers in collaborating with others about the special needs of young children. Through reviewing these video recordings, teachers developed a more comprehensive evaluation of the child's strengths and challenges, thus developing better strategies to assist the child. However, as early childhood teachers are faced with more emphasis on standardized assessment in the early years (Carlsson-Paige et al., 2015; Schultz et al., 2013) feelings of discontinuity occur as they implement assessments. Teachers value the significance of observational assessment or being a "Kidwatcher" (Owocki & Goodwin, 2002, p.20), but simultaneously know their responsibilities require less authentic assessments. Further, teachers realize the significance of incorporating technology. According to Blair (2012), a 21st century learning goal for teachers should be to imbed more technology in everyday planning to effectively reach the learners of today. The teacher in our study understood the importance of incorporating technology and wanted to explore how video might enhance the assessment practices in her classroom.

Photo by Nancy P. Alexander

Traditionally, observation of children involved taking notes.

Video Classroom Observation in One Preschool Classroom

The philosophies of Piaget (Inhelder & Piaget, 1958), Dewey (1933), and Vygotsky (1962) are evident in this three and four-year-old preschool inclusion classroom, which incorporates the HighScope Curriculum. HighScope encourages children to actively engage in a process called Plan-Do-Review (HighScope Educational Foundation, 2014), a time that children choose an activity of interest to them, carry out that choice, and share their accomplish-

ments. This classroom is designated as "inclusion" with two teachers, two instructional aides, and 19 children (seven with special needs). This study, however, focused on only one teacher and 12 of her preschoolers who are typically developing.

The classroom arrangement includes multiple areas of interest for the children with numerous materials to engage the children and promote curiosity, communication, collaboration, and reflection. Interaction among adults and children occur frequently and reciprocally while control shifts from teacher to child. Assessment occurs authentically in natural conditions with progress monitored and reviewed daily using Key Development Indicators.

Evaluation of the Key Development Indicators occurs through the Child Observation Assessment (COR) (HighScope Educational Foundation, 2014). The teacher participating in this study incorporates the COR on a regular basis. This study documents her journey into understanding ways to implement technology within her assessment during the spring semester. Specifically, I collected video clips of the interactions during these assessments on three occasions. The teacher and I analyzed the interactions, as well as reflected on the assessment process.

During the spring semester of the academic year, the teacher planned to observe three Key Indicators: Listening, Comprehension, and Creative Arts after reading *Harold and the Purple Crayon* (Johnson, 1955). Once the book was completed, the teacher asked the child to draw what they remembered from the story. As the children recalled details about the story, the teacher asked the children how the story applied to their personal lives. Although the teacher normally would have documented the responses by hand, she now used an iPad to video record the observational data. The children were familiar with iPads, therefore its use during the observation was found not to be distracting. Once the iPad was recording the observation, each video took approximately 8-10 minutes per child. While utilizing the iPad, the teacher identified unexpected advantages.

Observation is an appropriate method of assessment.

Benefits of Video Observation

One benefit of using video emerged as the teacher interacted freely with the child. The relatively relaxed atmosphere of the video recording allowed more dialogue between the teacher and child, thus encouraging a stronger bond between both parties. As the teacher and child interacted, the teacher learned more of the child's interests and described the process as a "more natural conversation that helped me to get a deeper look at who they are and therefore enabled me to plan for them better." Through these natural conversations, the teacher could now differentiate the instruction using the child's interests and the process of making meaning (Tomlinson & Edison, 2003).

Along with being able to differentiate for the child, the teacher was less concerned about noting each Key Indicator as it occurred because having video available of the observations allowed for multiple viewings. The children felt comfortable communicating about various topics while drawing at the same time. The teacher communicated how she was more relaxed and the children even asked when they might do this again with the teacher. Both parties experienced reciprocal benefits from engaging in this manner.

Another advantage emerged after the observation, which was helpful because it was close to the end of the assessment period. The teacher had planned specific Key Indicators to assess, but when viewing the recording, realized more Key Indicators could be assessed than originally intended, taking approximately 15 minutes per video (including taking notes and scoring). In conjunction with the Key Indicators of Listening, Comprehension, and Creative Arts, the teacher observed indicators within the domains of Social Emotional Development, Physical Development, Social Studies, and Approaches to Learning. The teacher believed that reviewing the video allowed her time to identify more Key Indicators and confirm previously noted Key Indicators, thus providing a more comprehensive and valid assessment.

Challenges of Video Observation

Using video as a method of observation reveals three areas of challenge. The primary challenge for both teachers and children involved specific distractors that limited or could eliminate effective use of video. If videotaping occurs rarely in the classroom, the iPad could become a distraction to the children as they complete the task. Extraneous noise from the children who are not being observed could also inhibit the implementation of this mode of observation. Finally, managing behaviors or materials requires the teacher to divide his or her attention away

from the child being assessed. However, the teacher in this case study solved this distraction by having an instructional aide take the children outside to recess while she recorded the video in a separate room.

Many early childhood teachers may not have the luxury of another classroom or full-time instructional aide as this teacher did. In that case, the teacher may need to videotape an entire group of children. According to Copple and Bredekamp (2009), sound assessment involves observing children in groups as they play and work collaboratively. This method may also yield information regarding the scaffolding of skills among their peers as well as social, emotional, and linguistic goals being developed by individual children.

Along with the challenge of distraction while videotaping, the time to view each observation may discourage some teachers from implementing this format. However, if instructional aides assist with classroom management, the additional time for viewing the observations may not be a factor. Further, if more skills can be observed, the extra time taken to watch the video may prove to be an advantage. When asked if the teacher would implement video observation again the next school year, she replied,

Yes, I still think that I get more out of the kids because I did not interrupt the interaction to make notes for the assessment. Discussion with them felt so much more natural because I knew I didn't have to use a mental checklist to identify each skill; I would catch it in the recording.

The last challenge involves securing appropriate technology to initiate the observation and the related computer applications for producing the video. Appropriate technology could include using a tablet or video camera to record the observations. Another alternative for videotaping includes using a personal cell phone with video capability to record the observation for later analysis. As with using any technology, teachers must first have permission from parents to videotape the child, and the recording must be stored in a password-encrypted site (Mindes & Jung, 2015).

Photo by Elisabeth Nichols

Technology provides another tool to document and store observations

Assessing with a New Lens

As teachers attempt to appropriately assess young children amid the various pressures of accountability, adjustments in assessment methods are required. The teacher in this study realized the importance of implementing video. The following paragraphs will describe three lessons learned after employing the lens of videotaping observational assessments.

Lesson 1: Use Technology to Enhance Data Collection of Developmentally Appropriate Assessment

The first lesson learned from this research involved how technology provides an opportunity to assess children in a developmentally appropriate manner. According to Puerling and Fowler, (2015), using technology affords teachers the ability to employ more authentic methods for assessment. For example, the authors describe an app used at Columbia College, *Childfolio*, that stores multiple forms of assessment documents such as video clips, photographs, hand-written notes, children's work, and other authentic assessment examples into a database. The database provides a report for administration, family or consultants.

Even with database capability, the most significant advantage is for the teacher to have a more authentic view of the child using observational assessment. Video recordings comprise one component in this holistic view of the child. Puerling and

Fowler (2015) describe how teachers are required to implement more assessments that produce data. However, with new apps available, such as *Childfolio* (Puerling & Fowler), *Pear Note* (2013) and *Livescribe* (2015), technology has provided innovations to employ video observations as a form of data gathering while also assessing children in a developmentally appropriate manner.

Lesson 2: Watch the Story Unfold

The second lesson from this study evolved as the teacher employed the video technology while watching and interacting with the child rather than taking notes. As the teacher in this case study engaged in the assessment, she said she focused intently on the individual child and felt a renewed connection to each student after completing the assessment. The child looked more relaxed and seemed to enjoy his or her one on one time with the teacher. A few students asked if they could do it again: *"I like this, can we do this every week?"*

The teacher reported feeling less pressured to pause and stop the dialogue with the children to write in the assessment journal. She commented, *"It didn't feel like an assessment. The students hugged me and walked away; they enjoyed it."* Instead of being stressed about assessment, both parties were relaxed. Rather than the teacher being focused on taking notes, she was fully engaged with the child, becoming the listener and reflecting on thoughtful questions to ask.

According to Owocki and Goodman (2002), interactions such as the ones experienced by this teacher become "an artful blend of following and leading at the same time"(p. 6). Besides the blending of the roles of learner and teacher, more emphasis occurs on developing goals for each child. Nemeth (2015) described how using technology such as digital recordings provides opportunities for teachers to individualize scaffolding supports such as vocabulary, translations, or sentence structure for Dual Language Learners (DLL). As teachers spend one on one time with children they become more culturally competent, thus becoming more culturally responsive to both the child and the family (Gay, 2010).

Reflection is a key component in effective observations.

Culturally responsive educators "teach to and through the strengths of their students" (Gay, 2010, p.31). Identifying these talents occurs as teachers center their attention on watching for nuances of the child rather than concentrating on noting the goals attained during each assessment session. Through this time spent together, teachers develop relationships based on trust, thus developing an understanding of each child. Pang (2010) described this as a Caring Centered Reflective Approach. Within this approach, teachers value and build reciprocal relationships, consider and plan experiences to develop the whole child, and then reflect and make decisions based on principles of integrity and honesty.

Lesson 3: Use the Rewind Capability to Capture the Full Picture

The third lesson learned in this study involved the rewind capability of video recording. By replaying the video, the teacher watched how each observation unfolded and determined multiple goals accomplished by the child. The rewind capability allows teachers auxiliary data to accurately analyze the areas of growth and areas of challenge for each child. Teachers comprehend the unique story of each child's development when using this method for assessment. One teacher - researcher who valued the stories of her students was Vivian Paley (1991, 1998). Although Paley used audio instead of video, her documentation of the children's stories along with her continued reflection provided ample data about the children and their unique developmental stages. Similarly, the teacher in this case study explained that the video process provided data for assessing more skills than originally were intended to be assessed.

In our study, when asked about how many Key Indicators were observed compared to what was originally intended, the teacher responded that 75% more were observed when she rewound and reviewed the taped observation. Using the video to listen and watch the child carefully provided examples of verbal language that would have been missed when completing the task with a pencil and paper. The teacher explained that as she watched the video observation that originally targeted the Creative Arts, she now also saw Social Skills, *"Each Key Indicator has many more subsets that you can see when able to go back and view the video."* Owocki and Goodman (2002) explained how well planned observations permit teachers to "step aside and observe the child from the sidelines" (p. 8). Bredekamp (2014) identified how once any observation has occurred, teachers should allow

time to pause and reflect on what was observed. Rewinding the video provides the time for teachers to watch it again, reflect on the context, and document all areas of growth in the child.

Using Video as a Tool for Assessing

With the increased accountability of early childhood programs and the need to carefully document each assessment, teachers need to explore videotaping to enhance observational assessments. Observing children continues to be an effective method for understanding the uniqueness of each child's development. As "Kidwatchers" (Owocki & Goodman, 2002, p. 1) teachers intently observe children determining the story of their growth. However, Puerling and Fowler (2015) noted that because of the increased pressure for data driven decisions, there is less focus on using observations. Using video alongside other forms of authentic assessment and storing them in an E-Portfolio system provides a new avenue for connecting observation with technology. This partnership provides a lens for assessment that utilizes technology effectively in the classroom while also making available an assessment for young children that is developmentally appropriate.

When video was used in this study the teacher realized the value of watching the child rather than hurriedly documenting what was observed. The teacher saw things that she would have missed and realized how stress-free this experience was for the children and her. The children responded positively and desired more time with the teacher. Copple and Bredekamp (2009) identified the significance of building a relationship with a child as one of the principles of Developmentally Appropriate Practice. As teachers build these relationships, they foster the children's self esteem and also enhance their own understanding of the social and cultural contexts of the child and the family. This further encourages their cultural competence (Gay, 2010) and supports the development of a bridge between the home and school. Using video supplies the teacher with a lens to understand the whole child while enhancing her relationship with the child.

Lastly, video assessment captures the observation so that teachers can reflect on it, ensure they have made an informed decision, and plan appropriate future instruction. Reflection is a key component in effective observations of young children (Bredekamp, 2014), and can occur as teachers replay the video.

As technology continues to expand, more options will emerge for incorporating videos into authentic assessment. Accountability mandates require data-driven methods and videos can provide one strand of the data for an authentic assessment. Technology is here to stay. Let's use it to our advantage as we assess children!

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Photo by Elisabeth Nichols

Observing children is an effective method for understanding the unique development of each child.

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