

**Capturing Learning in the Classroom (CLIC)
in Ontario's Full-Day Kindergartens:
Research Findings Report**

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Acknowledgements

I would like to thank all the Full-Day Kindergarten (FDK) teams, principals, coordinator, superintendent and my PhD supervisor, Professor CarolAnne Wien, who were involved in this research process at some point or another. The FDK teams welcomed me into their classrooms, and gave generously of their time to share their knowledge about the CLIC/DOCit software program and pedagogical documentation. An important ethical consideration in qualitative research is reciprocity. Reciprocity means that the research gives back and benefits the participants in a meaningful way. At the end of my second visit, I asked the participants if they thought my visits had been beneficial to them. The response was very positive. The participants felt that my visits had been good Professional Development for them and that their students had reaped the rewards. Our rich conversations about CLIC/DOCit and pedagogical documentation encouraged the participants to reflect on their own teaching practice and the way they document, helped the participants learn more about some of the features on CLIC, how to enhance their learning stories, and have a better understanding of the process of pedagogical documentation. At the end of my first visit, one of the participants commented, "I feel like I have learned a wealth of information today!" I too have learned a wealth of information. Thank you for a wonderful experience!

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Introduction

Capturing Learning in the Classroom (CLIC) is a Canadian-developed web-application designed to support teachers in inquiry-based Full-Day Kindergartens (FDK) when they document observations of children's learning experiences in the classroom. It streamlines the documentation process and automatically generates summaries for planning and communication of learning. CLIC allows teachers to link their observations to the expectations set out in the Government of Ontario's Full-Day Early Learning – Kindergarten Program curriculum document. CLIC facilitates making the learning visible to others when the learning stories and curriculum expectations are shared with the children, parents, colleagues and the larger community. The Ontario Ministry of Education has specifically identified pedagogical documentation as having promise as a way to document learning in FDK classrooms in new and innovative ways (Ontario, 2012; Wien, 2013; <http://www.edu.gov.on.ca/childcare/document.html>). CLIC is represented by Pearson Canada as a technological solution that makes the process of pedagogical documentation more efficient.

CLIC was first released to the market at the end of 2012. It was piloted extensively across Canada in FDK classrooms, and has been purchased by a number of school districts. User feedback surveys administered by Pearson Canada staff, shows a mixed response from the market. Some teachers in school districts are having a more positive experience with CLIC than others. CLIC was initially intended for the inquiry-based FDK classroom teaching teams. Pearson Canada believes, however, that CLIC could also play a valuable documentation role in higher grades, especially in classrooms taking an inquiry-based approach, where observation is an essential component of assessment and evaluation. The impact of CLIC in FDK classrooms has not been the subject of a rigorous research study. (See <http://www.pearsoncanadaschool.com//index.cfm?locator=PSZsFk>).

Pearson Canada proposed in 2014 that a researcher undertake a research study about the impact of CLIC on teacher practices and student learning outcomes in Ontario's FDK classrooms. This research project fits with a series of recent studies on how technologically innovative products are impacting pedagogy and assessment, both in Ontario's classrooms and elsewhere (Beggs et. al., 2012, 2013; Fullan, 2012; Fullan & Donnelly, 2013; Kitchenham, 2006).

Through the Mitacs Accelerate Program funded by Industry Canada, Brenda Jacobs was commissioned to design and undertake the research. She is a PhD Candidate in the Faculty of Education at York University who specializes in qualitative research on pedagogical documentation, self-regulation, and early literacy in Full-Day Kindergarten. She is also a professor in the School of Early Childhood Education at Seneca College and taught at the primary level for many years in Toronto, Ontario, Vancouver, British Columbia, and Oxford, England.

Objectives of the Research

The broad objectives of the project were to undertake a research study to determine if and how CLIC is making a difference to the way FDK teams in Ontario document learning experiences, can align itself with the practice of pedagogical documentation, and be a valuable resource for all FDK teams.

The specific objectives for the project are framed by the following research questions:

1. Does CLIC affect teacher practice and student learning outcomes in the Full-Day Kindergarten?
2. Can CLIC be used to support the practice of pedagogical documentation?
3. How can CLIC be revised to more effectively document and assess student learning?

Research Design

The research design is a qualitative case study with multiple sites. These sites included three elementary schools situated in a vibrant community of over 120,000 people in the heart of southwestern Ontario. The visits were conducted in five FDK classrooms between December 2014 and May 2015. Beggs et al. (2013) have observed that a case study approach is especially well suited for researching pedagogy and innovative digital practices in Ontario schools. A case study, explains Stake (2005, p. 443), “is not a methodological choice but a choice of what is to be studied.” For the purposes of this research study the case study is instrumental. Stake (2005) describes how instrumental case studies look at a case in-depth but the case plays a supportive role in order to facilitate our understanding of something else. It provides insight into an issue and enables the researcher to make generalizations. Having five FDK classrooms within the same case study allows for rich possibilities to emerge. Each classroom is similar in the sense that the FDK teams had experience using the CLIC software. The sampling for this research is purposive in the sense that only FDK teams that have used CLIC are included in the study. In purposive sampling, saturation occurs when the addition of more sites does not result in any new information that can be used in the data analysis (Teddlie and Tashakkori, 2009). I reached the saturation point with five sites and felt confident that the data collection was complete.

I visited the FDK teams twice over a five-month period as a participant observer. In each classroom, I observed the FDK team working with the students during class time and then documenting their observations, reflections and next steps on CLIC after school. I also asked the FDK teams semi-structured interview questions during informal conversations. The interview questions were similar for both visits. This allowed the researcher to determine if and how the objectives of the research had changed over time.

Participant observation, according to Kirby and McKenna (1989), “involves the researcher being a participant during the data gathering process...[It] makes the assumption that it is possible to ‘stand in the shoes of another’, to share and understand the intimate lives of others” (p. 76). Participant observation is flexible and combines ways of gathering data with direct observation to give a full account of an individual’s experiences. Direct observation and participation by the researcher provides meaning for the behaviours and attitudes shown by these individuals who are being researched in a natural setting. The researcher uses information that is meaningful and relevant and incorporates their own reflections as part of the data. Atkinson and Hammersley (2007) explain that, “all social research takes the form of participant observation: it involves participating in the social world, in whatever role, and reflecting on the products of that participation” (p. 15).

Qualitative research methods are the techniques that were used to generate the data, analyze and interpret it, and present it in narrative form. This qualitative research study used inductive logic/reasoning, starting with the data that I collected and then analyzing it to generate theory. The data was generated through observations, field notes, reflections, informal conversations, and audiotaped recordings. All interviews were recorded

and later transcribed. The data collection generated two hundred and seventy one pages of typed single-spaced notes.

Fontana and Frey (2000) describe interviews as a powerful way of collecting data. Interviewing is a research strategy that involves, in this study, a face-to-face verbal exchange where a researcher asks the participant questions. Interviews are not neutral tools for collecting data but active interactions between people that lead to negotiated, contextually based results. Researchers are not invisible neutral identities, the nature of the social dynamic that occurs during the interview can shape the knowledge that is generated as it is co-constructed by the researcher and participant. The text is negotiated as the researcher and participant share a reciprocity of perspective and become equal participants in the discussion.

The inductive analysis of the qualitative data was completed using a variety of techniques including categorical and contextualizing (holistic) strategies. These strategies resulted in a number of emergent themes, which are the dominant features or characteristics of the data. Teddlie and Tashakkori (2009) explain further that, "Categorical strategies break down narrative data into smaller units and then rearrange those units to produce categories that facilitate a better understanding of the research questions. Contextualizing (holistic) strategies interpret narrative data in the context of a coherent whole "text" that includes interconnections among the narrative elements" (p. 25). Categorical coding began with a broad range of themes based on the research questions. Within each theme several categories appeared that were also coded. The next level of coding involved looking for patterns and cross referencing what goes together. Contextualized coding for instances of broad based assertions were on-going simultaneously and patterns were identified. Inferences, conclusions and interpretations were made based on the data collection.

Since the research involved human participants, the research proposal was first reviewed and approved by York University's Human Participants Review Sub-Committee (HPRC). The research project was also approved by the Superintendent of the school district in the city where the research was carried out. All the FDK teams and principals signed consent forms that guaranteed anonymity and confidentiality.

Participants

The elementary school district that was chosen for this study was one of a number of possibilities that were identified by Pearson Canada. School districts were only considered if they had FDK teams that had used the CLIC software. Once the Superintendent of the school district had given permission for the research, the Coordinator of Elementary Curriculum and Program Services identified five FDK teams that might be interested in participating in the research. The Coordinator then passed the names of the possible participants on to the researcher. The researcher then contacted each participant and school principal through e-mail and then by phone to explain the purpose of the research, to invite them to participate, and arrange a time to visit the classroom.

The participants in the research study were five FDK teams. Each team consisted of a teacher and an Early Childhood Education (ECE). Some of the participants were quite new to the profession, most of them had a number of years experience teaching young children. The implementation of FDK here in Ontario was phased in over a five-year period beginning in 2010. All the participants taught FDK between one and four years depending on when their school was designated as a FDK site. The number of years using the CLIC software coincided with the number of years teaching FDK except in the case of two participants who taught FDK for one year before they started using CLIC. There were a total of ten participants, which included five teachers and five ECEs. One ECE left the school before the second visit in May.

During informal conversations, the participants were asked what professional development (PD) they had received around implementing the CLIC software program in their Kindergarten classroom. Some of the participants responded that they had been part of the pilot project in 2012/2013. Before the pilot began, representatives from Pearson provided a short PD session on CLIC to introduce it. At the end of the pilot project, representatives from Pearson visited their classrooms and asked for their feedback. The participants commented that it took a year for Pearson to follow-up their feedback on being able to upload more photos and make them larger. Other suggestions around having different templates to print were not followed up.

In 2013/2014 all the FDK teams were given CLIC. There was an initial presentation on CLIC by Pearson representatives at an FDK meeting where they gave an overview of the software, talked about getting permission from parents, and showed them how to input names. Some participants commented that it was a short meeting and people who had been involved in the pilot monopolized the conversation with their issues. Many of the participants commented that they had never received any PD from the Pearson representatives so far.

This past year, 2014/2015, those same participants who were new to FDK went to the school district Coordinator for a combined CLIC/pedagogical documentation workshop day. The participants commented that they were asked if they were using CLIC and shown how to upload videos. Some participants felt PD wasn't detailed enough to help them

understand how to use it. One participant felt she already knew how to use CLIC and had even created a handout to help her peers navigate their way through it. Many of the participants commented that they had really learned how to use CLIC from their peers and through trial and error.

Analysis of the Research Findings

During informal conversations, the participants in the study told the researcher what they liked best about the CLIC software program.

"I love having the curriculum expectations right there". All the participants felt it is a great way to learn the curriculum expectations.

"It is nice as a new teacher to the program to have an idea of what a learning story looks like because that was new knowledge for me". The learning stories give you a guideline, a graphic organizer to document the learning.

"I like the Other Assessment part, just for the little stuff that doesn't warrant a whole learning story but it's something else you want more than just a checkmark on the checklist". It was much better than having clipboards full of writing.

"CLIC was a way for us to keep our information current with each other, which I thought was super". We used the Other Assessment section as a communication tool so that we could see each other's notes on the children. This way we both knew what was going on with the child.

"The bar graph summaries are awesome". I like how you see that you have touched on other expectations that you might not have thought about. And it shows you the learning areas you are covering.

"I love how you can access it anywhere". On your phone, iPad, or computer.

"Being able to edit the photo sizes is a nice feature".

"Grade one teachers can go back and look at the documentation".

Research Question 1: Does CLIC affect teacher practice and student learning in the Full-Day Kindergarten?

Learning Stories

The participants were asked: how does CLIC fit into their daily teaching practice? how often do you document learning stories in the classroom? Most of the participants were creating learning stories on CLIC. The number of times per week varied between one and five. One participant had just returned from maternity leave but before she left she averaged ten a week. Some participants hadn't written any learning stories this year at all. Many of the participants told me that they hadn't written that many learning stories this year but that they had written a lot of learning stories in the past. I also found that the length of the learning stories varied tremendously. Some participants wrote a lot and some wrote very little. The rest of the participants fell between these two extremes. Some participants only wrote the learning stories at school. Many wrote the learning stories at home or did a

combination of both. Most of the participants used an iPad to take notes (Evernote, Notability, Pages) and then expanded on them when they cut and paste them into a learning story. Many of the participants would write anecdotal notes on paper first and some of the participants used a combination of the two. Some of the participants wrote the learning stories collaboratively but it was difficult to find the time to do so.

Observation and Documentation

The participants were asked: how do you think that CLIC has affected/changed your teaching practice in terms of observation and documentation? Most of the participants felt that CLIC had affected their teaching practice in a positive way. They felt they were better able to see the connection between the curriculum expectations and the learning activities in class, they took photos of the process, they asked more open-ended questions, and used CLIC as a communication tool with their partner.

During my first visit, the participants responded:

Having all the expectations on CLIC helps it to become automatic when you are observing. I was very aware of being able to see the learning and the things we are looking for. "It's made us better with documenting".

There is a learning curve. Now, we that we have learned the expectations we take photographs for a purpose. We are seeing the learning and it is more obvious in the documenting. We take photos during the middle of the process as opposed to just the finished product. It has changed how we document.

CLIC has helped us to have a better idea of what to look for when we document. In the beginning we didn't know what a learning story was but now we are able to transfer that knowledge. "Having this program helps you if you're new to FDK to sort of understand and easily learn what it is you're actually supposed to be doing. It provides you with that template".

This year I have been trying to think about what is the main reason I did this story. What is the main learning that I want to see. Otherwise, you are clicking so many expectations. It is a lot of documenting and it becomes too complex and time consuming.

I feel like it goes in waves. When things are busy that slows down the documentation. It is also tricky if you have a number of children with significant needs or you just have a challenging class.

It takes no time to create a story when I write enough down. I will do the story and add the expectations. I really like the drop down menu, you become so familiar with the expectations. Now that I am more aware of the expectations it is easier to notice when something is happening in the class. You can quickly check the expectations on the Ipad. Then that can guide your conversation with the children. Asking them open-ended questions and going deeper to find out what they are thinking.

I always think about the questions I will be answering when I create a learning story. I am more aware of asking open-ended questions.

The reflective part is good because it makes me think of the moment more deeply. It is not just telling the story but thinking about it.

I do document differently in the sense that I am aware when I am going to put it in the children's portfolios and the parents will read it.

As a new kindergarten teacher I still have questions running through my mind about what I am documenting. Am I documenting enough? What's important in this?

Ideally it would be better if we had our laptops with us so we could input while it's happening.

We use the Other Assessments to add notes daily so my partner could see the things I'm seeing. This way we have got the most important notes in a central spot so we can refer to those for the report cards.

This year it is difficult to send home the learning stories home because of issues of confidentiality. So part of our concern is just how many learning stories can you create with just on e child? It is too much work to individualize the story.

Sometimes I just take a picture and think I'll do it later. If I don't do it that evening I forget.

Within two seconds, I'll think can I use this as a learning story. Then I'll just ask additional questions. I'm more aware and I want to make a point of remembering it. I will run and get the iPad take a picture and write some notes. It also helps me with the expectations.

The camera and video camera are essential. I feel I have changed in terms of my questioning with the children by asking more open-ended questions. In terms of observations I am more aware of what I am looking for. I have assumptions about where something will go and then it goes in a different direction. I have to be more open with where things will go and the expectations that might be covered.

I was introduced to Pic Collage. "I kind of view it as a glorified scrapbooking option. It doesn't have the options in terms of the curriculum expectations and that kind of thing but it is very, very quick. It's basically just drag and drop photos and input a couple of lines about a learning situation...It isn't as extensive. I don't think it could necessarily be used as an assessment tool". Another participant said, "I guess they could go back and read the story and that's how they are assessing it, but to me, I like having this [CLIC]".

**I found that learning stories didn't work well with inquiry based learning because it was just little snapshots and you miss out on the whole context. For inquiry-based learning you start with a question. You need to be able to show the progression.*

Observation and Documentation Five Months Later

Five months later, when I went back to visit the FDK teams I was surprised to find that interest in using CLIC had declined dramatically. Many of the participants were now averaging one learning story on CLIC per month. Participants who said they weren't using

CLIC during my first visit were still not using it. Some participants had stopped using CLIC in the past couple of months. At four of the sites, the participants were now using almost exclusively Pic Collage. At one of the sites, the participants were using almost exclusively Pages. Despite this most of the participants still felt that CLIC had affected their teaching practice in a positive way.

During my conversations with the participants on the second visit, I asked the participants to think about how the other software programs compared to CLIC. The participants responded:

Because of the dynamics in the classroom it is just a lot easier to use Pages. You take a couple of pictures and write a few lines and you don't have to fill in every single box. When I am doing a little Pages thing, it is something interesting the kids are doing but I'm not really putting a name to the learning. If I see something where a lot of learning is happening, a lot of skills are being shown then I know it requires more documentation and I will write a learning story. I can highlight the learning and label the expectations. I can see deeper into what they are doing.

When you know that you are going to write a learning story you can stretch the learning experience out a little bit and dig a little deeper. So you can be missing those amazing moments if you just do Pages.

I have been using other avenues to do documentation. I use Pic Collage and Notability to track notes. I just find the other apps easier to use. I will then check off the expectations using a printed list. With Pic Collage I do it in the moment. I can do it with the child right there. I am focusing on having the children involved in creating and sharing about their learning. The kids also love picking backgrounds.

If I am going to do a learning story I would probably look for more details and ask more questions. It made me think more about why, why did we do this, why did we document it and where are we going from here. It would be in more depth. Pic Collage is more about the observations rather than reflections and extensions.

When writing learning stories on CLIC I pay more attention to detail and I am less biased. I don't make assumptions about what I am seeing. I think about what did I really see and what did I hear the child say. It's in the reflections that you can add your own opinion.

We are just branching out and finding other ways to document. Pic Collage is just a snapshot and a few sentences. It is simpler, it's pretty and then you just print it. You need to be diligent to bring it back to the expectations. Some of Pic Collage documentation is just stories but others are specific and expectation driven. Pic Collage is more like an observation only.

With Pic Collage I don't ask as many questions as I should have or could have. You don't have the expectations so you really have to think about the connections.

In Pic Collage the picture is more prominent and it tells a lot of the story. Pic Collage is less detailed. You are just focusing on observations but you could focus on the other ones as well.

If you think about it from a parent perspective the pictures are more important than the words. In CLIC the words are more important than the pictures. CLIC provided the foundation for me to do Pic Collage. It needs to be fun and interesting.

When I look back at the learning stories I think well that really didn't warrant a learning story. Then I started to have more substance in them. So then I wasn't doing as many but then the ones I was doing were better.

I write more now. I think my learning stories are better quality. Now I just sort of get on with it. I do the conversation piece more.

CLIC teaches you how to go through all the steps and then as you get more comfortable you start to automatically do it, just like you automatically learn the expectations of the grades you are teaching. Then you can transfer that knowledge.

We are trying to write a learning story within Pic Collage. It is not as in-depth but we are still mentioning what the learning is. It is quicker and easier and we can have a printed out copy of it. Obviously the learning expectations are not going to be at the bottom of it but we became more familiar with them from using CLIC. Now that we know those it is easier just to write down what the kids said. "And is it as in-depth, probably not". It serves our needs at the moment.

We do learning stories but just not on CLIC. You probably spend more time on the observation. CLIC was a learning curve and I have transferred that knowledge. With Pic Collage all the parents can see it not just two or three parents. With CLIC I felt like a waste of time because nobody could see it.

"I think it [CLIC] would be beneficial for new FDK teachers and ECEs, maybe even a mandatory use of it, honestly. It changed my thinking".

I don't agree with the idea of going deeper when using CLIC. When I write observations I always start on Evernote and I don't know whether it will turn it into a learning story.

Planning and Assessment

The participants were asked: how do you think CLIC has affected/changed your teaching practice in terms of planning and assessment? Most of the participants thought that CLIC was very helpful in terms of planning and assessment and they would use the summary section to see what expectations children had covered and what learning areas they still needed to focus on. Some participants also mentioned that they thought the next steps section of the learning story helped them to plan. Most of the participants thought that CLIC was helpful in terms of assessment and many of the participants thought they would be able to use CLIC to find specific examples for the report card.

During my first visit, the participants responded:

The summary bar graphs help to show what learning areas and expectations we have and have not covered. We look at the bar graphs to see which children we are seeing and what

learning areas we are covering. Then we say oh my goodness we haven't really noticed a lot of this. We need to pay more attention to that. We have been doing a lot of this but not this. This part is handy. "So, like those visuals are kind of helpful because you can quickly look and say okay, I need to pay a little bit more attention to what's going on in this area".

The summary graphs are very helpful. When you look at the graphs you can see which areas you still need to work on. We use it as a resource for the curriculum. It helps us plan when we look at the expectations. I will say to my teaching partner we don't have anything on this child in social/emotional development. So then you know you need to get something in there. It makes you more accountable.

The summary section helps me to plan. I will see that we haven't done a lot in this area or with these expectations. Maybe tomorrow I will focus more on that. The summaries help us keep track of who doesn't have enough learning stories. It's easier to go on there and see who needs what. It is great to go back to the summary page and see which child still needs to be observed in certain areas. What has been done and needs to be done.

Bar graphs are used for planning. I look at them to see what we haven't covered in terms of learning areas or for specific children. I know this experience shows me this learning expectation and I plan what I can do to extend the learning.

Looking at the summary section helps me to find out what children have met the expectations and seeing where they need to go from there. I can see what they haven't yet been able to achieve. You have it in the back of your head that's what I should be looking for.

When you spend an extended length of time on a learning event and you are thinking of next steps, it makes you think beyond. You don't really do this with checklists.

It helps you to think about next steps. It makes you look at the activity in a different light, what you could do with it.

I find the Other Assessment section helpful because I can just glance at it. It is observations that you are not going to write a whole learning story about. I use this section to make specific comments about the learning in the report cards.

You can look at the summaries and say this is an area of strength, this is something they might need to work on. I think it will be helpful for the report cards.

I think it is easier when you use CLIC because you know what you have to assess and it's right there. It will be good for reports because we are expected to provide specific examples. We are going to write the report cards collaboratively so we can help each other find specific examples.

It doesn't affect my planning. I don't plan for specific things to happen. The summaries help me to focus on specific children but not overall planning and implementation.

Having the expectations right there was helpful for me but it doesn't help in terms of planning. The bar graphs just tell me who I have done a learning story on it is not an assessment piece. I might have missed a couple of kids but they might be documented

somewhere else. What we see in CLIC depends on what we put in there not so much what the kids are doing. We plan what to do from the curriculum document. We use checklists and other things for assessment.

Planning and Assessment Five Months Later

Five months later, the participants were asked how do you think that CLIC has affected/changed your teaching practice in terms of planning and assessment? Despite the fact that the FDK teams were using CLIC less often, most of the participants still felt that CLIC was very helpful in terms of planning and assessment. Many of the participants did use CLIC to find specific examples for the report cards. The participants responded during my second visit:

I think so, when you write the learning story and you look at the expectations you have covered and think about where can I take this, where can I go from here. It helps you to see the learning. The more you practice it the more instantaneous it becomes.

So the next steps section really helps us with the planning in terms of what to offer the children next. I think more deeply about where to go with the children.

It is so easy to see, you just pull up the summary and you think what's left?

In terms of planning, I find I use the summary section of CLIC. I look at the student data and learning areas. Maybe tomorrow I should focus a bit more on language and literacy.

A big advantage of CLIC is that the summaries help you know what you have covered and what you need to continue to work on. It helps to make sure that you get to every child.

I find the assessment piece is easier. Both teachers can see the expectations that are covered through the documentation in Other Assessments. It is two sets of eyes seeing the learning. It is easy to see which kids you are not noticing as much. Some kids just blend in.

I used the Other Assessment section to help write report cards. I would glance through and see what expectations were covered. Then I might check on a child by re-reading the learning story. You can pull out comments as specific examples.

The learning stories are helpful in terms of writing your reports and planning for future activities in the classroom.

In terms of assessment, CLIC makes you accountable. We referred to the learning stories a little bit when we wrote the report cards.

It really helped with assessment. It made the report cards more specific because I could use personalized comments. It gives you something to draw from so you have more detail.

Student Learning Outcomes

The participants were asked: how do you think CLIC has affected/changed student learning outcomes in the classroom? Most of the participants felt that CLIC had changed

student learning outcomes. In terms of observation and documentation, they were more aware of focusing on the process when taking photos, and they encouraged the children to share their thinking and re-visit their learning. In terms of planning and assessment, they covered more expectations, planned more carefully, and had more information for the report cards. Some participants felt that using CLIC had not changed student learning outcomes.

During my first visit, the participants responded:

"I mean, you'd like to think that change in teacher practice impacts and benefits the kids". Every year our goal is to improve ourselves in order to improve learning outcomes for the kids. CLIC probably had something to do with that because now I'm more aware of what I'm looking for. There's more purpose behind the photos that I take and now I look at the process.

The students need to adjust because we are trying to catch the photos of the process. We talk to them about why we have the iPad and camera out. We know that we take photos to put on the documentation board. They know they are on the right track if we are taking pictures of what they are doing. If we take a picture the children know they will need to explain their work. It shows they are thinking about what they are doing.

It gives the children multiple varied opportunities to share their knowledge. They can see the learning now with the documentation we put up.

Hopefully we cover more expectations and the children are aware of what we are looking for too. We know what we are looking for so it makes it easier on them.

I think the kids are getting a more enriched program because we can look and see who we don't have a learning story on or we need to look at this learning area. You know who has covered something and it helps you to notice the kids that just fade away. They benefit because we realize that we have to look more at this child or that child.

It affects student outcomes because you are cognizant of what expectations you've covered and then you are thinking ahead. This way kids don't get missed.

If it changed your planning and your connection to the expectations surely that has an effect on student learning outcomes. I revisit the learning stories to see the growth over time.

The children have benefitted in terms of planning and covering the curriculum. CLIC provides them with more information to help them assess the children's learning.

I don't think CLIC has affected the student learning outcomes in our class.

Student Learning Outcomes Five Months Later

Five months later, even though CLIC was not being used as much, most of the participants still felt that CLIC had changed student learning outcomes. In terms of observation and documentation, they focused more on their questioning, the learning was visible, and the children could share it with their parents. In terms of planning and

assessment, they felt they were more thorough about covering the expectations, they put more thought into planning, and it helped them to write the report cards. Some participants still felt that using CLIC had not changed the student learning outcomes. The participants responded during my second visit:

I think my learning stories are a little bit better now because I have developed in terms of the way I question the children and what I draw from the children. Before my stories were not as full of substance as they could have been. I've developed an understanding and a greater sense of what the important pieces are.

I think the kids are getting more in terms of learning outcomes because now their learning is visible to them. They share it with their parents.

I think it makes you more aware of the areas maybe you need to focus a little bit more on and bring that into the learning. So in the blocks instead of just focusing on math focus on the language as well. The more you are aware of it, the more it helps to enhance the children's experience. It enhances the learning and informs and teaching practice.

I look at summaries and see what I haven't covered. It is better for the kids because you are putting more thought into your planning.

When it changes how you plan and write the report cards or do assessment it affects the children.

I don't think the learning outcomes for children are better with CLIC. I think they are better with PIC Collage because the children can interact and you can write the learning story together. When I wrote learning stories on CLIC, "It was not fun, or pretty. It was a chore". Children's attention spans are shorter. So they want something fast.

CLIC really only benefitted the kids in terms of me looking at the summaries. But I still include the expectations on Pic Collage. You have an idea of okay I haven't touched base with that kid for a while or covered that strand.

Research Question 2: Can CLIC be used to support the practice of pedagogical documentation?

Pedagogical Documentation in Ontario's Early Learning Policy

The term 'pedagogical documentation' was first introduced by Dahlberg, Moss, and Pence (1999) to describe a particular type of teacher research methodology in order to distinguish it from other forms of documentation that are prevalent in North American schools. Although pedagogical documentation is a relatively new research methodology, it has been evolving in the preschools of Reggio Emilia, Italy for the past forty years. The Reggio Emilia approach has had a profound influence on the practice of pedagogical documentation around the world including Canada.

Pedagogical documentation is also now an important theme in Ontario's early learning policy. In a new 2014 document, *How Does Learning Happen? Ontario's Pedagogy for the Early Years*, pedagogical documentation is described as a process in the environment that helps us understand how children think and learn (Ontario Ministry of Education, 2014). It is, in other words, a way of finding meaning in what children do and experience and making that learning visible to others for interpretation.

Dahlberg, Moss and Pence (2013) define pedagogical documentation as "a process and an important content in that process" (p. 156). Pedagogical documentation as content is material that records the work of the children, what they are saying and doing, as well as how the teacher relates to the children and their work. It makes the pedagogical work concrete and visible and therefore is an important part of the process of pedagogical documentation. The process involves using that material to reflect upon the pedagogical work in a rigorous, methodical and democratic way. Reflection is done by the teacher on their own, with colleagues, with children, and the children's parents.

Pedagogical documentation, from my perspective, is a narrative about the children's and teacher's learning, shifts in their thinking, and their search for meaning. Documentation becomes pedagogical when it is used for research purposes. Pedagogical documentation as a research methodology is centered around project work in the classroom. A project begins with a question or inquiry that is of interest to the children. Documentation such as transcriptions of dialogue, photographs, videos, children's work samples, teacher reflections and analysis of the children's learning, and purpose of the project is generated during emergent curriculum projects and made visible on posters or panels, or in diaries, books or folders. This allows for collaborative discussion and interpretation with others and provides direction for what to do next.

Pedagogical documentation offers those who document and those who read the documentation an opportunity for reflection and further learning. Wien et al. (2011) explain that,

Two important levels of thought are made evident in strong pedagogical documentation. The teacher presents data in ways that show others what children have been thinking, feeling, or valuing. At the same time, the teacher selects material and composes a display that expresses her hypotheses about the children's experiences and ideas" (p. 12).

It is important to remember that when teachers select and compose documentation, it is a subjective choice, and they take responsibility for their choices by sharing the documentation with others. However, it does not mean that one choice is more important than another. When we make choices other possibilities are lost.

Pedagogical documentation is first and foremost a documentation of relationship, it is not an assessment or an evaluation of what children can do or what level of academic achievement they have reached (Wien, Jacobs, & Brown, 2015). The relationships documented are the relations or connections that teachers notice children are forming and

how these connections shift, alter, mobilize, flourish, and rest. This kind of documentation is a process of listening to children and others that occurs prior to assessment or evaluation (Wien et al., 2015).

Assessment in pedagogical documentation, explain Forman and Fyfe (2012), involves the on-going study of children. This study enables educators to focus on an emergent curriculum that supports individual and group learning. Assessment in pedagogical documentation is not done to compare children, to determine placement, or to grade but rather to understand the feelings, interests and capabilities of children.

It is, however, problematic to “conflate pedagogical documentation with assessment, for they answer different questions about learning” (Wien et al., 2015). The primary purpose of pedagogical documentation is to follow the connections children construct and to study the meaning making that emerges from those connections. The primary purpose of assessment is to place children on a continuum where they are expected to learn certain knowledge and skills that compares them to a specific standard (Wien et al., 2015).

Professional Development in Pedagogical Documentation

During informal conversations, the participants were asked what PD they had received around pedagogical documentation. Many of the participants had not received any PD on pedagogical documentation. In the Fall 2014, many participants who were new to FDK went to the school district Coordinator for a combined CLIC/pedagogical documentation workshop day also discussed above. They learned how to document in a variety of ways. The participants thought the workshop was wonderful and came away with lots of new ideas. They thought the idea of assembling documentation panels with children was fantastic.

In the Spring 2015, some of these same participants attended another pedagogical documentation workshop with the Coordinator. The Coordinator wanted the participants to start thinking about pedagogical documentation, what it looks like, sounds like and feels like. The participants were then asked to go back to class and try it out. This led to these teachers establishing a commitment to action. The participants later met, shared their documentation and how they were trying to make it visible to others.

Some of the participants also attended Ministry three sessions on pedagogical documentation in Burlington during 2014/2015 school year. Wonderful ideas were presented. Beautiful slideshows helped the participants learn about different ways to document, the importance of the environment, how to make the learning visible, revisiting the work and so on. The last session was an opportunity for the participants to bring in examples of their own documentation and talk about what they had done and what they had learned from it. The participants were asked how to encourage teachers to use pedagogical documentation in the higher grades.

Wien, Guyevskey and Berdoussis (2011) offer five aspects of a teachers' progression towards more sophisticated pedagogical documentation. The first aspect is developing the habits of documenting which means having the tools you need at hand, developing the habit of thinking to document the learning experience and becoming aware of moments that have the potential to yield something meaningful about learning. The second aspect is recounting classroom experiences and going public with their documentation. These are first stories of learning that a teacher creates and puts on display for others to see and respond to. The third aspect is developing a more sophisticated level of visual literacy skills so that decorative frames and bright coloured backgrounds clutter the message the teacher may be trying to communicate.

When teachers progress to the fourth aspect, which is making the children's learning visible their documentation becomes more sophisticated. This aspect shows evidence of the teacher's thinking about how the children's theories change over time. The teacher's intention becomes visible and she can make inferences about the children's theories. Here the teacher's visual literacy skills are sufficiently developed to convey their inferences clearly in their documentation. The fifth aspect is where teachers share the children's visible theories with others for interpretation and to plan further learning experiences. Dialogue about the documentation can enhance the teacher's thinking about the children's understanding. In essence, the strongest pedagogical documentation shows what the children are thinking and the teacher's hypotheses about the children's ideas and experiences (Wien et al., 2011).

Understandings of Pedagogical Documentation

In order to determine where the FDK teams were according to the progression of more sophisticated documentation, discussed above, in combination with my observations during the class visit I asked the participants about their understanding of pedagogical documentation. I found that during my first visit, some of the participants were at a pivot point between aspects three and four. Wien (1995) explains that here teachers "grasp that there is something more—they catch glimmers—but cannot produce it yet in their documentation" (Wien et al., 2011, p. 4). These participants have made the learning visible to others and will list what the children are thinking, however, there is no evidence of the teacher's inferences about the children's theories. I found that some participants were recounting learning experiences and developing their visual literacy skills. Many of the participants were developing the habits of documenting.

During my first visit, the participants responded:

Anything you put up in your classroom that demonstrates the children are meeting the curriculum expectations.

It is an opportunity for you to self-reflect about what is going on in the classroom.

**The children can re-visit their learning experiences.*

I think of it in terms of showing the progression as the child grows and learns over time.

You are documenting their learning.

It is a more organic way of documenting what's happening. I tried making a panel by having the kids tell me what was happening in the pictures. We connected it to the expectations.

The children are leading their learning and we're guiding them to the expectations.

It is my way of ensuring that I have a proof of the children's strengths and needs. It gives children a voice.

Paying attention to what direction the children are taking you and listening to what the children are saying just because sometimes you can make assumptions.

I think it is a great idea to have the children help assemble the documentation panels. They can revisit an inquiry and more learning is happening because of it. I would like to begin to get children to help with the learning stories.

Documentation is definitely a challenge for educators. Teachers are so concerned with writing those report cards at the end of the year, making sure we have the data and making sure that we have covered everything.

We need to pay closer attention to the process and make an effort to be there during process because an extraordinary amount of learning happens through that process.

Understandings of Pedagogical Documentation Five Months Later

Five months later, I found that many of the participants were just starting to share their documentation with their colleagues. They talked about the children's theories and how their thinking changed over time. There was still no evidence of teacher's thinking about the children's theories in the documentation itself. It was wonderful for me to see how these participants were embracing pedagogical documentation and how their efforts showed progress towards more sophisticated pedagogical documentation. Some of the participants had still not reached the pivot point.

The participants responded during my second visit:

It was nice to see other people's ideas, how they do their documentation differently and what things worked.

When we share our documentation I am getting ideas and finding different ways because there is lots you don't think of when you are only one person.

*We were talking about the children's thinking and how their thinking changes over time. *The portfolios and working windows provide an opportunity for the children to revisit their learning. When they revisit the learning something else might stem from that when they talk with one another.*

The quality of your learning stories, develop, when you have a better understanding of pedagogical documentation. You can add your interpretations to the reflection section.

CLIC Support for Pedagogical Documentation

The participants in the study were also asked if they thought CLIC supported the practice of pedagogical documentation and if so, how. Many of the participants agreed that CLIC does support pedagogical documentation. It gives teachers the opportunity to document the children's theories and ideas, reflect on the learning to see how the children's thinking has changed, to think about possible ways to extend the learning, and to make the learning visible to others.

During my first visit, the participants responded:

I think the extension part is what makes you look back and reflect on what did the children learn and where am I going to go with that. I think that goes full circle when you document what happened, why you think it happened and then where you are going from there. This fits in with reflection and next steps in the learning story.

Different learning experiences are connected to learning stories. Pedagogical documentation is like a series of learning stories. Specific things occurred during the inquiry that the learning stories would be based on. It's kind of like a web of learning stories.

In the learning stories you can document the children's thoughts you can go back and revisit it and see how their thinking has changed. You can share this with your ECE. It is about being ready to grasp those moments.

It makes you really look at your observations and how you can take them further.

I think near the end of the year the learning stories show the growth in the children.

It can be made to support pedagogical documentation. We can make the learning visible by posting the learning stories on our blog, putting them in the portfolios and on display in the classroom.

CLIC Support for Pedagogical Documentation Five Months Later

Five months later, most of the participants at this point agreed that CLIC does support pedagogical documentation. The participants who had PD on pedagogical documentation had a more sophisticated understanding of it and were sharing their knowledge with their colleagues. The participants were now also thinking that when they documented they needed to include the children's voices in the reflections and opportunities to extend learning and that the children should revisit and reflect on their own learning.

The participants responded during my second visit:

I think that CLIC encompasses the whole process. It takes all the aspects of what documentation is and puts it into one program.

CLIC allows you to put in media and it forces you to step back, watch what's going on and try not to jump in. You need to take the time to observe what's going on before you can even put anything in the learning story. It forces you to slow down and dig a little deeper. Connecting it to the expectations I think that's how they can go together too. Like with pedagogical documentation, you need to listen, slow down and think deeply about the learning experience and how the children's thinking changes over time.

The three steps in CLIC help you to think pedagogical documentation through and you also get the expectations.

Teachers can ask the kids to help them come up with ideas for reflections and next steps. This way you are getting the kids to reflect on their own learning.

I talk with my ECE to plan further learning experiences. We can show how the children's thinking has changed over a number of experiences in the reflections. With DocIt it will flow better.

When we make the learning visible the children can re-visit their own learning.

Research Question 3: How can CLIC be revised to more effectively document and assess student learning?

Improving CLIC

The participants were asked during my first visit if they had any suggestions about how to improve the CLIC software. The participants responded:

All the participants said that they wanted it to save automatically. You have to click save after every time you add something or it will not save your updates or changes. If you go do something else when you have a learning story open and you haven't saved it, you lose it. One participant said that she had a love/hate relationship with CLIC because it would shut down and it wouldn't save if she got pulled away.

The participants all felt that there should be a way to connect the learning stories and group them together. This way you can show the stories in a progression or a continuum to show the bigger picture of what is going on in a whole inquiry.

We would like to be able to add pictures to show a timeline within the same story.

Many of the participants also wanted to be able to add comments to a section so that they could show the development of a concept/skill over time. Perhaps even do it with a different colour print to show it is from a later time period.

Most of the participants wanted CLIC to be more visually appealing and interactive. They felt other software programs were more attractive because the children can see a great big photo/large font and they can interact with the teacher when she is typing in the story. They are more inclined to tell you about their learning. With CLIC you are typing into a tiny box

and there is all this other stuff around. There is a lot of writing and the photos are small. The kids can't interact and be involved in making the learning story.

Many participants also thought it would be great to have a child friendly version of CLIC so that the children could create their own learning stories. Perhaps with a bigger buttons on the keyboard and child friendly language prompts. Or perhaps a version where there was Part A for the teacher and Part B for the children.

We need someone that we can contact at Pearson that will respond with a solution to our problems more quickly. Every year there is a different person at Pearson to contact if we need help. Trying to get answers to simple questions can take forever. Three conversations and three e-mails later I never got an answer.

Many of the participants wanted to have different templates for the pictures and words and be able to change the size of the font. When it prints it can be up to four pages long. Printing on one page would make it look a lot more professional.

*It would be easier if it was an app so you could just click on it rather than it being web-based. *It would be better if we could save the username and password instead of having to put it in every time. Sometimes when I put my password in I have to do it two or three times and I am careful. Kids get frustrated when you have to keep re-entering your password multiple times. It also times out to quickly and I have to re-enter my username and password again.*

When Pearson inputs the student's names at the beginning of the year we might not get them until November. It would be nice to have the stuff sooner, like by the end of the first week of school. Some teachers felt it would be better to input their own information so they could just get going. Some teachers thought it was too time consuming to input all the data and the start up is the most frustrating part.

When teachers input the student's names it seems to cause a number of technical difficulties including: one member of the FDK team not having access to the children's names; having to use lowercase for SK names because they were inputted the year before; summary bar graphs appear empty; photos are missing; not having access to last year's learning stories or Other Assessments; and not being able to add on in the Other Assessments for some children so multiple boxes are created.

Some tablets are not compatible with CLIC.

Sometimes CLIC will freeze when I am inputting a learning story and I will lose everything.

It would be ideal if last year's students learning stories carried over from JK to SK. That way you could quickly see what expectations they have already covered. Perhaps the font could be a different colour for the SK year.

In the other assessment section I have to click out and back in again to see my last year's JK comments. I want easier access to last year's kids so that I don't repeat the same information.

It is also frustrating trying to get permission from the parents and tracking that. We were never able to e-mail the parents directly. It was a school wide decision not to send learning stories home unless the faces and names were blacked out.

It would be good if the data could be sent on to the next teacher and then the information for each child would already be there, including the parent's permission. It is a problem when you switch a child from one class to the next.

It would be good if we could send the learning stories and Other Assessments on to the Grade 1 teacher.

It is hard to upload more than one video and if it is too long it won't load at all.

Takes a while to upload multiple pictures. We need to be able to do this to show the whole process.

I would like to have access to my camera so I can add the photos faster.

Some teachers mentioned they would like CLIC to include a voice activation feature because it is time consuming to sit and type the learning story up.

I would like to see the delete/view button separated more. I'm afraid I will hit delete by accident.

I don't like how the prompts disappear as soon as you click on it to add stuff to a section. Then I have to go keep going back.

The Other Assessments section is confusing. I thought it was based on a learning story that had already happened and it was additional observation. I just avoided it. It should be called Other Documentation or just Notes.

Some participants thought it would be helpful to have access to the D/WD when it came time to write report cards.

I wish I could alphabetize it by the children's first names.

Spell check would be handy.

In the student summary I would like it to tell me each expectation the student has covered.

The opportunities to extend learning section of the learning story is not entirely necessary because it is very repetitive. You don't always want to fill in every box and then it won't save.

CLIC for Grades 1 to 6

The participants were also asked during my first visit if they thought CLIC would be useful for teachers who taught Grade 1 to 6. Many of the participants felt that the programs in the upper grades would have to be more inquiry-based for the teachers to benefit from

using CLIC. Some of the participants felt it would help the teachers learn the expectations and that it is convenient to have everything in one program.

The participants responded:

Yes, last year when I taught Grade 3, I struggled with how to keep track of the expectations that the children had met versus what hadn't yet been covered, whereas before when I taught FDK, it's all right there.

Some participants felt it might help the teachers learn the expectations and that it was convenient to have it all in one program.

I do because it works well for me. I think they would feel strongly about having the option of using the levels like developed/well developed because that is something that is very prevalent through the grades.

The talk is that inquiry-based learning is going to transfer over to the primary grades. So it only makes sense that the documentation would carry over into the primary grades.

Next year's teacher can go back and see where the child was the year before.

I can't see them using it no. I don't know how they would incorporate a learning story. You'd have to go through a lot of professional development to convince them. It would be challenging.

Honestly, probably not because it is a heck of a lot of work. They have different expectations and different ways of evaluating to come up with marks. If the early grades became more inquiry-based than perhaps CLIC could move with it. But right now I don't think so.

If you are not inquiry-based would you really want to write a learning story? I didn't think it would fit.

Responses to DOCit

In 2015, Pearson Canada released DOCit, which is the newest version of CLIC. It was designed based on user feedback in the market, similar to the above. Like CLIC, DOCit is a Canadian-developed on-line tool designed to support teachers in inquiry-based classrooms when they document observations of children's learning experiences in the classroom. It streamlines the documentation process to help make learning visible to others. Teachers can capture and attach photos, audio and video files; and write notes about their observations, reflections, dialogue with others and next steps. DOCit allows teachers to link their observations to the expectations set out in the Full-Day Early Learning – Kindergarten Program and The Ontario Curriculum documents. Teachers can also assess student development if they wish. The DOCit overview screen allows teachers to see at a glance which students they have observed in each curriculum area and to look at each student's profile to see the student's level of development and their progress over time. DOCit is represented by Pearson Canada as a technological solution that makes the process of pedagogical documentation more efficient.

Seven of the ten participants went to the DOCit demonstration in the Spring 2015, prior to my second visit. The overall response by the participants to DOCit was very positive. The participants enjoyed the demonstration, were enthusiastic about the changes that had been made, and were hopeful they would be able to use DOCit in the Fall 2015. Some participants felt they would really have to use DOCit to get a sense of it.

The participants were asked during my second visit what improvements they liked best about the DOCit software. The participants responded:

It saves automatically. You don't have to fill in every box and it still saves it.

Everything you need is on the homepage as opposed to having to click into all those other sections to find something, it is right there.

The homepage has a cleaner look and looks easier to use.

It is easily accessible, quicker and user-friendly.

It is faster to upload and you can add more photos and videos.

You can add captions to the photos.

The photo can be used as a visual cue to help you document the story. The picture can say more than the words.

It is easy to export, create your own template, change the size of the photos/words, and post-it on your class blog or website.

It is more visually appealing so the kids will be more interested in it as well.

It automatically sorts the learning stories and puts them into each child's profile.

The language is clearer and easier to understand. For example Notes rather than Other Assessments.

You can attach the Notes to each child's profile with the little pencil at the top rather than having to go in and out of Other Assessments.

You can add more boxes, make comments or continue the learning story. You don't have to enter a new document each time. Now you can see the progression of learning over time.

I like that we can access both the FDK curriculum and the Grade 1 curriculum.

You can create tags so if there is something you want to put in the report card you can find it easily.

It's great that each board can customize it the way they want to. I like that they added in the faith component.

The start up at the beginning of the year will be more manageable once they have the children's OEN numbers.

Improving DOCit

The participants were then asked if they had any suggestions about how to further improve the DOCit software. The participants responded:

Voice activation would really save time.

I would like it if you could write with your finger instead of typing.

I wish I could print straight from my ipad instead of having to load it on the computer first.

The tags are useful but it would be better if you could see your teaching partner's tags.

It would be great if it was an app so that we could access it instantly.

It would be much faster if it could be up and running and not time us out. It takes too much time to re-sign in.

DOCit for Grades 1 to 6

The participants were also asked if they thought DOCit would be useful for teachers who taught Grades 1 to 6. Most of the participants, who attended the DOCit session were hopeful that the teachers in the upper grades would find DOCit useful. The participants responded:

Yes, I think that if they have a proper understanding of what it's for and proper training they will find it useful. Technology can be overwhelming and intimidating to a lot of people so PD is essential.

For sure, our principal is trying to get iPads for teachers because first of all they are going to say they don't have the technology. But I definitely think it would be helpful and they would use it. It is the way of the future.

I think it is the way the curriculum is going and the teachers in the grades are going to have to accept that. Having a tool to document will make people happy because then they are not going to be able to say how am I supposed to assess this.

It is a great tool to learn all the expectations.

I think there has to be a balance of inquiry-based learning and pencil and paper. The transition could start out slow. Even if the teachers observed for 20 minutes a day. The learning that occurs far exceeds what was done with paper and pencil alone.

In FDK we observe what's going on and then we link it with the expectations near the end of an inquiry. Then you step back at the end you think wow this was truly amazing look at all

the expectations I covered. Whereas, in the upper grades the teachers look at the curriculum expectations first. For inquiry-based learning you need to know the expectations and feel confident that you will be able to cover them.

The teachers in the upper grades are becoming more interested. DOCit will probably fill a void.

I just think it's like a slow process. The grades have even more expectations and they have to come up with grades. I think it's going to take a long time for some people because change is always difficult. There needs to be a balance but DOCit is something that could help.

They could send home the documentation on the blog. This will help draw the parents in and they will build onto their child's learning.

I find that teachers in the grades have a very different way of looking at inquiry and pedagogical documentation compared to Kindergarten teachers. It always seems to fall back on how the grades have so many more expectations to cover and that they have to give grades on the report cards. I don't think they will use DocIt based on the conversations I've had with my colleagues and administration.

Conclusions

1. When teachers are new to FDK, CLIC greatly enriches their teaching practice. It helps teachers learn: what experiences are worth documenting; how to use technology to capture the process; to slow down and listen to the children's theories and ideas; to ask open-ended questions to probe more deeply into the children's learning; to reflect on the learning experience; to think through ways to extend the learning; how to make the learning visible; to connect the learning to the curriculum expectations; to use the summaries to help them see which children are having opportunities to meet the expectations and that all learning areas are being covered; and to use specific examples as evidence of learning on the report cards. In essence, CLIC makes the teaching practice of new FDK teachers stronger.

2. CLIC also enriches student learning outcomes. Children discover that the learning process is valued when their teachers document their learning through notes/photographs/video and ask them to share their theories and ideas and then later revisit their learning when it is made visible to others. When teachers plan carefully, they cover more curriculum expectations and ensure that all the children benefit from the learning opportunities they provide. When teachers write report cards, they are able to take specific examples from the CLIC documentation to show evidence of the children's growth.

3. Although CLIC is extremely valuable for new FDK teachers in terms of teaching practice and children in terms of learning outcomes, teachers find it difficult to sustain over time. Writing learning stories is incredibly time consuming. This results in teachers reducing or discontinuing its use after an initial period of immense learning about how to document learning experiences. At some point, teachers transfer what they have learned from using CLIC to other less time-consuming documentation software programs like Pages and Pic Collage. When they first start to use these other programs, they may not go into as much depth initially with observations, reflections, and how to extend the learning, but potentially they could. Connections to curriculum expectations can still be added by cutting and pasting.

However, even if teachers were still doing all these steps at the level of quality they once did in CLIC (although I do question if this is even possible), other programs do not provide summaries that help teachers see which children are having opportunities to meet the expectations and that all the learning areas are being covered. These visuals help teachers see at a glance where there are gaps in their program and which children they still need to focus on. The other value of using CLIC is that it keeps all the documentation together in one program so it is easier for teachers to find evidence of learning when writing the report cards.

4. CLIC and the practice of pedagogical documentation are aligned for all the reasons listed under teacher practices and learning outcomes above. However, it is important to

remember that pedagogical documentation is first and foremost a documentation of relationship, it is not an assessment or an evaluation of what children can do or what level of academic achievement they have reached (Wien, Jacobs, & Brown, 2015).

I believe as well that CLIC falls short when we think about more sophisticated documentation. When the learning is made visible, the strongest pedagogical documentation shows what the children are thinking and the teacher's hypotheses about the children's ideas and experiences (Wien, Guyevskey & Berdoussis, 2011). Here there is evidence of the teacher's thinking about how the children's theories change over time and the documentation is shared with others for interpretation and to plan further learning experiences. Once teachers reach the pivot point they are likely to generate and share their documentation in ways that reach beyond what can be done using a software program.

Recommendations

1. More professional development around how to use the CLIC/DOCit software is absolutely imperative in order for teachers to take full advantage of everything the program has to offer. There are many features on CLIC that the FDK teams were not even aware of. Perhaps there should be someone at each school designated to attend CLIC/DOCit PD and disseminate the information to their colleagues. It is expensive for a school to get supply teachers for everyone so this could be a win-win situation.
2. Teachers become very frustrated with technical glitches around how to run the software and the start up period at the beginning of the school year is too slow. In order to avoid teachers making the decision not to use CLIC/DOCit at all, technical glitches need to be resolved quickly and there needs to be someone at Pearson Canada who can respond immediately to teacher's questions and concerns. Start up time at the beginning of the year when children's information is entered at Pearson Canada has to happen much more quickly. If CLIC/DOCit is not ready to go in September, then teachers are looking for alternative ways to document.
3. In order to avoid teachers choosing to use other documentation software programs, DOCit needs to be visually appealing, less time consuming, interactive, and easy to post on blogs or websites. Teachers prefer the focus be more on the photograph and less on the words. This enables a more interactive experience with the students and the students can help to co-create the documentation. A large photo holds the students' attention while the teacher documents the learning experience in real time. Teachers post learning events on blogs and websites on a daily basis. It must be easy and fast to export the documentation on DOCit to these sites. It also has to be possible to share the documentation with all parents because teachers do not have time to individualize which parents to send it to.

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