

Requirements for a Tool for Coaches to Support their Work to Improve Quality Teaching and Learning in Head Start Classrooms

Prepared for:

the National Center on Quality Teaching and Learning

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Purpose of this Report

The purpose of this report is to outline some key requirements for a tool that can support coaching to improve the quality of teaching and learning in Head Start programs. Requirements refer to what the tool must be able to do to support the different aspects of coaching in a wide range of settings.

The report describes:

- How we identified these requirements
- Agreed upon constraints for the design of the tool
- Values of key stakeholders that should inform design
- Imagined needs of different kinds of users
- Potential scenarios of use
- Key requirements
- Recommendations for next steps

When referring to the coaching “tool” throughout this report, we mean a technology or set of technologies that can support Head Start coaches in doing their work with lead and assistant teachers in centers and home-based care and with home visitors who work with parents and caregivers. At present, it is too early to say what specific hardware or web applications will be needed; however, the content of this report is aimed at helping the NCTQL coaching team make that decision.

Approach

In developing educational technologies, our research team adopts a participatory design approach. In participatory design, developers engage stakeholders in many aspects of design, including establishing the goals for design and requirements for technologies to be developed (Muller & Kuhn, 1993; Schuler & Tamioka, 1993). The purpose of involving stakeholders is to maximize the likelihood that a new technology will meet users' needs and be easy to use. Participatory design techniques can also help surface important design tensions that must be addressed in developing software, tensions that may arise from conflicting goals or values (Tatar, 2007).

One participatory design strategy for developing design requirements is to engage key stakeholders and representatives of target user groups in a *design charrette*. A design charrette is an intensive, collaborative experience that brings together stakeholders to develop a shared understanding of the diverse needs a design must meet, to brainstorm possible ways to address those needs through designs (Sanoff, 2000). A charrette is typically an intensive, fast-moving experience. It requires both imagination and collaboration from participants. Participants imagine what users are like and need, brainstorm possible designs, and work together to construct stories that describe how possible designs might be used. The facilitators take the input from the charrette and produce a synthesis that informs the next phase of design. A charrette typically takes place near the beginning of a design process; stakeholders in participatory design continue to be involved at later stages of design in different ways.

We facilitated a design charrette in Nashville, Tennessee on August 30, 2011 with representatives of the NCQTL coaching team, center leaders, and Head Start coaches nominated by center leaders. Members of the coaching team helped us plan the charrette by helping to identify potential participants and by constraining the tool's design space (the purposes for the tool, target user groups, and range of situations the tool must support). Below, we list the participants in the charrette and the Center stakeholder or user group they represent:

Shelly Anderson – Clayton Early Learning, coach

Kathleen Artman Mekker – NCQTL, former coach

Denise Binder – NCQTL Coaching Team, former coach

Carol Bolz – MARC Early Learning, Director

Caren Calhoun – Tulsa Educare, Director
Alice Chung – Early Reading First Grant Coordinator
Maureen Conroy – University of Florida, NCQTL Coaching Team
Barbara Dowling – Head Start Education Coordinator, Sioux Falls, SD Director
Lise Fox – University of South Florida, NCQTL Coaching Team
May Louise Hemmeter* – Vanderbilt University, NCQTL Coaching Team
Jennifer LoCasale-Crouch – University of Virginia, NCQTL Coaching Team
Kiersten Kinder* – Vanderbilt University, NCQTL Coaching Team
Mary McLean – University of Wisconsin-Milwaukee, Researcher
Angel Roper – Clayton Early Learning, Coach
Ragan McLeod – Vanderbilt University, NCQTL Coaching Team, former coach
Marsha Miller – NW Michigan Community Action Agency, Project Manager
Susan Sandall* – University of Washington, NCQTL Leadership
Jamie Sheehan* – Office of Head Start, former coach
Kristin Wagner – Knox County (OH) Head Start, Inc. Director
Sue Washburn – EDC, Technical Assistance Provider

*Asterisks denote members of the planning team for the charrette.

Agreed Upon Constraints on the Design

Prior to the charrette, members of the NCQTL coaching team helped define some constraints on the design space for the charrette. These constraints provided broad guidelines for participants in the charrette and represent the team's thinking about the key purposes the coaching tool must serve. The agreed upon constraints were:

The primary goal of the tool is to support coaches in their work to improve teaching and learning. Coaches' relationship to adults they help is ideally a facilitative, supportive relationship. The tool should support those qualities of that relationship that allow teachers and home visitors to make improvements to their practice. Although coaches sometimes serve as supervisors of teachers and provide accountability data to center managers and leaders, the tool will not be designed primarily to support these functions.

The tool will need to serve the needs of different types of users. Many different people provide coaching in Head Start. These include people whose primary responsibility involves serving as a coach to teachers, as well as directors, peers, and coaches of home visitors. These types of users can be expected to vary with respect to their knowledge and skill with respect to supporting those they coach in implementing evidence-based practices for improving teaching and learning in the domains of the Head Start Learning Outcomes Framework.

The content in the tool will be aligned to the National Center on Quality Teaching and Learning's Framework for Effective Practice. The "House" framework represents a synthesis of decades of research on the dimensions of quality teaching and learning in Head Start. The coaching tool will need to support the work coaches do to implement practices in these different dimensions. These include evidence-based practices identified as part of the literature review now being conducted as part of the NCQTL's activities.

The tool should support multiple critical activities of coaching. These activities include not only conducting observations, but also planning for coaching events and longer-term engagements and reviewing data with coaches, among other activities.

The tool will need to work even if the local site where coaching takes place is not connected to the Internet. Many Head Start classrooms still lack wireless Internet

services. As a consequence, the tool will need to be flexible about when and where data collected or entered into the tool are uploaded.

Range of Situations of Use

After an initial planning meeting with the NCQTL Coaching Team, we decided it would be useful to add some constraints to the charrette as to the situations of use that would be the focus of participants' design efforts for the day. The situation types below do not characterize in any way the full range of situations of use, but they do correspond to three major types of situations of use:

Use of a tool by a Head Start coach working with Head Start teachers. This situation represents the most common situation of use. During the charrette, two small groups considered this type of situation.

Use of a tool by a Head Start coach working online with Head Start teachers. A number of coaching models rely on technology to support or mediate the coaching relationship; many of these are "blended" models that include a mix of face-to-face and online activities. During the charrette, one small group considered this type of situation.

Use of a tool by a Head Start home visitor with families. This situation is quite different from the other two situations, in that the targets of coaching are parents and caregivers, not teachers. Similarly, the coach is likely to have skills more similar to a teacher than to a teacher-leader serving as a coach. During the charrette, one small group considered this type of situation.

One other situation identified ahead of the meeting was not the focus of effort at the design charrette: coaching in Early Head Start. Throughout the day, some teams did discuss and consider design needs for this group of coaches. In addition, one participant asked for clarity regarding whether the tool should be able to support a coach working with teachers to form a professional learning community. This, too, is a situation of use for which the tool should be useful, we agreed.

Quality of User Experience Sought

In the first activity of the charrette, participants shared with one another the characteristics of technologies they use every day that they like and dislike. We used their responses to identify some key qualities of user experience that stakeholders prefer. Users' experience of the coaching tool should reflect at least some of the preferred qualities and minimize users' technology dislikes. As part of testing the tool with coaches, we can ask participants to reflect on the quality of their experience in using the tool, as one dimension of evaluation.

Technology Likes

Increases efficiency

Accessibility in a range of environments

Ease of use

Portability

Provides access to useful resources and information

Technology Dislikes

Difficult to learn how to use

Incompatible with other tools used everyday

Diminishes quality of relationships with others

Reduces reflection on action and promotes reactivity

Anticipated Needs and Concerns of Users

We asked participants in the charrette to construct *design personas* to guide their thinking during the experience. Design personas are vivid representations of prospective users' needs and practices, embodied in characters designers can relate to and utilize as they weigh possible design requirements and refinements (Grudin, 1996). Personas give designers powerful means to reason about design issues and often contribute to better design processes (Dantin, 2005; Nieters, Ivaturi, & Ahmed, 2007).

We asked each of the four teams to construct four personas, each representing a different type of user:

A power user: Someone who is likely to use a coaching tool all the time, for all the purposes/functions for which it is designed. Power users represent an ideal user, though power users make up only a small proportion for any technology.

A misuser: Someone who is likely to use the tool, but for purposes for which it was not designed and that could undermine the effectiveness of coaching. Imagining misusers helps designers anticipate unintended consequences of technology (Friedman, Kahn, & Borning, 2003).

A skeptic: Someone who is not likely to make use of a tool, unless it is designed to be very usable and useful and everyone else is already using it. Skeptics may be key influencers in organizations and are critical for reaching scale with any new technology (Moore, 2002).

An extreme user: A user with a unique situation or circumstance (groups will need to specify the circumstance). Some users with unique circumstances can provide designers with insight about the nature of the practice that a technology is designed to support.

In constructing personas, we asked participants to describe their relationships and roles, what the persona might report was rewarding and challenging about their jobs, and their comfort with technology. We also asked that participants take an empathic stance toward each of the personas, that is, to consider rewards and challenges from

that user's point of view. Below, we present several of the personas developed by the four teams.

Constructed Personas of Power Users

Head Start Center-based Coach Jennifer

Role. Jennifer is a coach with many responsibilities. She conducts observations of teachers, sometimes video taping them. She supports curriculum implementation and the use of authentic assessments. She works collaboratively with her teachers to develop a 9-month plan for coaching that is linked to the Head Start outcomes framework. She has a handful of classrooms for which she is responsible at any time, and she works primarily with the lead teacher. Sometimes she also helps with assistants. She has to travel several miles between the schools she serves.

Jennifer is both a coach and a supervisor of teachers. She meets regularly with teachers in meetings that blend her supervisory and coaching role. For the most part, the teachers see her as blending these roles well.

What Jennifer finds rewarding about her job. "I really like seeing teachers' CLASS scores go up in classrooms where I work."

What Jennifer finds challenging about her job. "I don't get enough time in the classroom with teachers, because I have to go to so many different sites, and I have to wear so many different hats."

How a tool could help Jennifer. A tool could help Jennifer with streamlining her job, and with keeping on top of her many different responsibilities, of which coaching is one among many.

Head Start Center-based Coach Polly

Role. Polly is a coach in a Head Start center. Her only role is to coach teachers, and she does not supervise teachers. She has substantial classroom experience, can easily share best practices. She has a solid understanding of coaching frameworks and has experience with technology tools (e.g., camera, internet, email). She is able to

use technology easily and integrate it into her work. She is able to appropriate model practices and has confidence in her ability to prepare teachers to implement new practices and technology tools.

What Polly finds rewarding about her job. “I love seeing teachers make changes in their practice. I see teachers as professionals always seeking to do better, and I love feeling like I can help them hone their craft in teaching.”

What Polly finds challenging about her job. “I have trouble scheduling enough time with my teachers, to incorporate all the activities I’d like to cover in my coaching.

How a tool could help Polly. A coaching tool could help Polly easily access more ideas to support teachers. A tool would allow her to connect teachers to resources.

Online Coach Alix

Role. Alix has been a coach for 3 years, and was a Head Start teacher for 5 years before that. She provides coaching online to teachers in a wide variety of locations. Her role is solely that of a coach, and she doesn’t have any supervisory relationship to the teachers she coaches. She does have to track what she does for her supervisor, and she’s expected to coach in a wide variety of domains related to the HOUSE framework.

What Alix finds rewarding about her job. “Seeing the difference that video can make. It really has helped. We send the teachers instructions and a camera. It really helps teachers with reflecting on their practice when we can look together at a video they’ve shot in their classroom. Also, I am really into ongoing assessment. I like using spreadsheets to aggregate and analyze data. I don’t particularly need a tool to help me with that, though others might.”

What Alix finds challenging about her job. “My teachers have a lot of tech issues. Some don’t have good access. Others, the firewalls and file sizes keep them from uploading the videos. Sometimes, I just don’t even get what the struggles are for the teachers who don’t use technology. If they would only upload their video on time! Some teachers take forever to respond.”

How a tool could help Alix. A tool could help Alix see better the entire HOUSE framework as the context for coaching to improve quality teaching and learning. She needs a tool that helps her see the ground she is covering, and what she is not covering. She needs something to keep her focused on where she is headed, as well as some specific strategies and resources for engaging teachers who are mostly disengaged or who are burnt out.

Home Visitor Coach Jasmine

Role. Jasmine is a home-based teacher. She doesn't work in a center. Rather, she works with a group of 12 families in Michigan's Upper Peninsula. Visits are once a week. She develops goal and follows up, she models, and she provides resources. She sees herself as a "family coach." Spends a lot of time in her car moving from place to place.

What Jasmine finds rewarding about her job. "I love supporting families, so that they can support their own families."

What Jasmine finds challenging about her job. "It's hard to work with families that have such different needs, skills, and resources. I have a heavy caseload, and I don't always know how to prioritize what needs come first. Families don't always show up for visits, and they keep the TV on when I am there. Coaching adds just another layer to my work."

How a coaching tool could help Jasmine. A tool could help Jasmine figure out how to come up with an agreement for how to work together with families. A tool can give her a framework to work within, too, in developing these agreements.

Constructed Personas of Misusers

Head Start Center-based Coach Jennifer

Role in the school. Marie provides coaching to both infant/toddler and preschool teachers to several schools in her district. She does not have the time to coach all teachers in the school, so she recruited teachers who were on corrective action, on the grounds that these teachers had been identified as needing the most help. She is new to her role as coach and to Head Start. She works hard to make sure that teachers' practices adhere to the frameworks and expectations of her district.

Role in the district. In addition to being a coach for the district, Marie is part of a team that monitors compliance to federal regulations for Head Start. She relishes this role and is eager to support her boss, who is an enthusiastic supporter of the district's strong accountability program.

What Marie finds rewarding about her job. "I like it when teachers turn things into me on time, like their lesson plans. When their portfolios are organized, consistent, and typed up. I also like getting clear direction as to my role from my boss."

What Marie finds challenging about her job. "The people who drive me crazy are teachers who allow a kind of controlled chaos in the classroom."

How a coaching tool could help Marie. A coaching tool could be useful to allow Marie different models for building a more collaborative coaching relationship. The tool would need to guard against the risk of Marie using it primarily to document and catch when people are not in compliance with rules and regulations.

Head Start Center-based Coach Michelle

Role. Michelle is unclear on her role as a coach and uses the coaching tool for other purposes, such as evaluating practice. She has her own agenda for coaching. Also, when she provides coaching, the new tool takes more presence than the teachers' needs. She has a large load and therefore the tool makes her feel accountable; she goes through "tasks" on the tool as if it were a checklist she needs to complete (rather than focusing on the process). She also has a harder time integrating technology tools (integration and use of these tools is not as smooth for her).

What Michelle finds rewarding about her job. “I like accomplishing things, seeing my to-do list get shorter as I mark things off that I got done.”

What Michelle finds challenging about her job. “I have a hard time prioritizing things, given my large work load. I can’t find time, either, to collaborate with peers. Maybe if I had more time for that, I could hear what they do to work with teachers, and my teachers wouldn’t frustrate me so much.”

How a tool would help Michelle. A coaching tool that required input from teachers on a plan for coaching would facilitate greater ownership over the process of coaching. In addition, if the tool allowed her to see the range of needs of her teachers and possible goals for coaching, she might be able to better prioritize her to do list.

Online Coach Sarah Jane

Role. Sarah Jane is first year coach who provides coaching online, and she is pretty inexperienced. She is excited about her role, and uses a lot of social media in her personal life. She gets in trouble with her supervisor for sharing video that one of her teachers shared with her on YouTube. In general, Sarah Jane gravitates toward activities, not practices linked to any framework. She does so because she believes fun activities are what engage kids the most.

What Sarah Jane finds rewarding about her job. “I like sharing activities with teachers that I find. I think they really see that as one of the benefits they get out of teaching, too.”

What Sarah Jane finds challenging about her job. “Last month, I got in trouble for posting a teacher’s video to YouTube. I didn’t get what the big deal was, since I thought it was a great example of an activity that I wanted my other teachers to be able to see. Plus, some of these teachers couldn’t get access to the program site because of technology issues. I wish my supervisors were more open to experimenting with new technologies.”

How a coaching tool could help Sarah Jane. A coaching tool could help Sarah Jane learn about privacy and its importance, and it could help her understand how particular activities promote learning aligned with the Head Start Outcomes

Framework. It could also provide her with frameworks for analyzing curriculum materials her teachers are considering using.

Home Visitor Missy

Role: Missy is a home-based teacher and doesn't work in a center. Rather, she works with a group of 12 families in Salt Lake City. Visits are once a week. She develops goals with families and follows up, she models, and she provides resources. Sees herself as a coach for the families she serves. She always starts with food services, bill paying, and a few other things that she thinks are important. Often, she notes, families aren't the best at setting their own priorities or knowing what issues have consequences down the line, so mostly she decides what the focus of coaching will be. She doesn't put as much focus on following up, focusing instead on the next person on her list to help.

What Missy finds rewarding about her job. "I love giving information to families, stuff that's really critical to keeping them out of trouble and providing them with resources that can help with child rearing and education."

What Missy finds challenging about her job. "My families frustrate me a lot. They don't listen to what I have to say. I don't know if I can stay in this job, it's burning me out fast."

How a coaching tool could help Missy. Missy distrusts technology, but she is good at using what they make her use for her job. She would use a tool that lets her document the work she is doing for families. A risk is that the tool allows Missy simply to "check off" things she has done, without documenting families responses or their progress, and without considering families' needs and issues in the coaching process.

Constructed Personas of Skeptics

Head Start Center-based Coach Bob

Role in the classroom. Bob is a coach with a lot of responsibilities for documentation. His center provides coaches with laptops for this purpose, but they take a long time to boot up and frequently give Bob trouble. Bob never sees very much he can use in his coaching from the documentation. Also, as part of his role as coach, he videotapes teachers in their classrooms and reviews these videos with teachers. Bob is experienced, and he likes reviewing video with teachers because he finds they help teachers attend to quality in their teaching.

Role in the center. Bob serves both as a coach and a curriculum instructor in a community-based center. In his role as curriculum instructor, he is responsible for monitoring implementation for Creative Curriculum. He plays this role in the same sites here he coaches, though he is clear to let teachers know what hat he is wearing when he visits a teacher's class.

What Bob finds rewarding about his job. "I like the interpersonal side of my job and choosing what works for our program. I don't jump on bandwagons, and most new things that come along just seem to me to be the flavor of the month."

What Bob finds challenging about his job. "I need repeated exposure to new things before they really sink in. And before I try a new approach that involves a big change to how I do my work, I want to know that it's going to be supported for a long while, and not just this month."

How a coaching tool could help Bob. Although Bob appreciates technology, he is not technology focused. He needs to see colleagues benefiting from a new technology before he will try it out. If they show him something that they can do, that he'd like to do and can only do with the tool, then he might adopt the tool himself.

Head Start Center-based Coach Sandra

Role. Sandra has been coaching for a long time and now feels she needs to use something "different" and "new" which has been frustrating the past. She thinks teachers may have a hard time switching to a different process. She is very stressed

and has big caseload. As a consequence of her large caseload, she therefore feels she has no time to learn this new coaching system. Sandra uses email and ATMs but no smartphones, tablets, or other portable devices she sees many other people using every day.

What Sandra finds rewarding about her job. “I enjoy coaching and personal relationships; I like it when the things I do support the relationships I build.”

What Sandra finds challenging about her job. “I find change challenging, especially when it requires technology. I avoid things that interfere with those relationships.”

How a tool could help Sandra. If the tool is user friendly and she can be easily trained to use it, she may find it useful for gathering information about her teachers.

Experienced Coach Doris Assigned to Coach Online

Role. Doris is a really experienced coach. He has been coaching for 12 years and is very accomplished. Even though she’s been assigned to begin to work with teachers in an online environment, she doesn’t understand why technology is useful to coaching. She has an established system that has worked well, and she’s got great relationships with teachers she has coached. People she has coached 10 years ago keep in touch with her.

What Doris finds rewarding about her job. “I love the connections I’ve made across the years to the teachers I’ve coached. I love hearing back from the ones that are still teaching about how they are doing many years later.”

What Doris finds challenging about her job. “We get asked to do things all the time that we don’t have good support for or time to figure out. Technology’s a good example: I am supposed to be an online coach, but my own access to technology is spotty, and I don’t know where I’d find things that would actually help me do the work of coaching. Plus, I feel like it would make me less effective and take time away from relationships”

How a coaching tool could help Doris. A tool could help Doris if it provided examples of specific practices linked to the HOUSE framework at her fingertips. At the same

time, she will need better access to technology and to professional support for using the tool, if it is to be effective.

Home-based Coach Sally

Role: Sally is a home-based teacher. She doesn't work in a center. Rather, she works with a group of 12 families in Tampa, FL. Her families work in agriculture, and they move from place to place often. They tend to have very basic needs. She tries to visit once a week. When she is able to meet with families, she develops goal and follows up, she models, and she provides resources. Sees herself as a "family coach." She spends a lot of time in her car moving from place to place.

What Sally finds rewarding about her job. "I take pride in providing support, sometimes the only support, to families with lots of big needs. It means a lot to me when I feel like I am doing my job well, being there for families."

What Sally finds challenging about her job. "Language barriers. Families come and go with the seasons. Strawberries are harvested from December through March. Lots of new families are only there for those months. Oranges, tomatoes, the families move with the crops. Families are big, with lots of extended family members. Immigration issues loom large, making families hesitant to interact with outsiders. There are very limited resources in homes, but sometimes have cell phones (maybe only the men), satellite television, and handheld game devices. Short opportunity, but a long list of possible goals.

How a coaching tool could help Sally. Sally is comfortable with technology, but she is skeptical that her families are comfortable with it. They are immigrants, and they would distrust any video or audio around, and perhaps even computers. She doesn't believe technology can help her with her work, because her families have hardly any at all. She needs to know and believe that the tool will help her with her own work before she will adopt the tool.

Constructed Personas of Extreme Users

Head Start Center-based Coach Ursula

Role. Ursula's center has suffered budget cuts. She is social worker, but has now been asked to provide coaching to teachers. She has substantial experience working with families but no experience in early childhood teaching and has never been a classroom teacher. Ursula doesn't prioritize going into the classroom as part of coaching (she doesn't have confidence to observe and model) and prefers to schedule meetings with teachers.

What Ursula finds rewarding about her job. "I enjoy hearing how children are progressing and lending a helping hand to teachers. I really enjoy supporting teachers emotionally and being a sounding board for them."

What Ursula finds challenging about her job. "I find it challenging to support practice and to suggest changes to teachers' practice that require me to give sometimes negative feedback. I also find it challenging to balance my social work responsibilities with my responsibilities to teachers as their coach."

How a tool could help Ursula. A coaching tool could provide pop ups and links that guide her through the coaching process with teachers. Examples would be beneficial. For example, sample video lessons she could use as she engages with teachers would be useful.

Telephone Coach Dorothy

Role. Dorothy does all of her coaching by phone from her home in Kansas. For her, this is the first job after completing college she's had. The goal of her program is to reach isolated rural families across the country; primarily, she talks with families on cell phones that the program pays for and loans to families. The families Dorothy coaches have a variety of issues they discuss with her, from health to education. There is no sense of a community of families, because families come and go from her caseload and never interact with one another.

What Dorothy finds rewarding about her job. “I live in a rural area myself, and grew up in one, so I know the struggles these families face to raise healthy children and to get them ready for school. I like that I am helping these kinds of families.”

What Dorothy finds challenging about her job. “I feel pretty isolated myself. I don’t have a lot of opportunity to talk to people who do the work I do, and a lot of the cases are tough.”

How a coaching tool could help Dorothy. A tool could help connect Dorothy with other coaches in situations like hers to discuss issues they face in their work. She might share audio files of cases she’s had and engage in-group supervision calls with other coaches. At the same time, she does not have a high-speed internet connection at home, so her participation would be limited to when she goes into the agency office, which is once every two weeks.

Home-based Coach Desi

Role: Desi is a supervisor of 24 home-based teachers in Medford, OR. She spends more time working with the teachers she feels need her support most. She oversees paperwork, and also wants to make sure they’re doing the best they can with families. She’s responsible for their performance, provides negative and positive feedback, but also wants to be a supportive, positive resource.

What Desi finds rewarding about her job. “I think coaching’s really valuable to my families, and I want the coaching process to go well. To make a big difference, it has to go well. I am really proud when I see my home visitors grow professionally.”

What Desi finds challenging about her job. “Supervising and supporting so many professionals is difficult. I’m in charge of a lot of different people, and I have to work with a lot of my coaches from a distance. It’s tough not being able to see families myself, build trust with them, and to know what I should discuss with my staff. How do you keep tabs on everyone and make sure you are meeting their needs? Sometimes, too, I struggle to check myself: I want to jump in and work with families the way I used to when I was a home-teacher. Their needs are so different from my experience.”

How a coaching tool could help Desi. Desi likes technology, because it helps her connect with people in new ways. She would like tools to help her see the big picture of what's going on with her staff, who's doing what, who's effective. She needs support for decisionmaking. She needs to know that the tool is not an example of a fad that comes and goes, but that is here to stay.

Common Characteristics of Personas

There were many similarities among the personas constructed by the groups:

Power Users tended to be innovators or early adopters more generally in their settings, who could be counted on to embrace enthusiastically almost any innovation that promised to improve teaching and learning. These users had an altruistic orientation, though there were perhaps not skeptical enough about tools given to them.

Misusers as a group were likely to use a coaching tool for accountability purposes to “catch” teachers doing something wrong than to use it to enhance a supportive relationship focused on teacher growth.

Skeptics as a group could be won over only if the tool helped them do something more efficiently that they already do; the groups felt skeptics were critical to ensuring that the tool would be widely used.

In addition, many of the personas were coaches who also had roles as supervisors within their centers or agencies. Such coaches might be expected to experience role conflict, because their roles in monitoring teachers' performance might sometimes conflict with their role in providing support to teachers for self-reflection on areas needing improvement. Such role conflict could also reduce trust in a coach-teacher relationship. In general, for a number of personas, having to wear “many hats” in their job presented coaches with significant challenges and in some cases signaled a risk of burnout.

Finally, across different user types, to be successful, the tool must come with professional support for its use and a commitment to supporting implementation. Experienced coaches are likely to view a new tool as just one among several innovations that are introduced but that disappear after only a year or two, unless they

see evidence of a commitment from supervisors, their center, and the NCQTL that the tool's effective use will be encouraged and supported.

Hypothetical Scenarios of Use

Scenarios are important tools for designers, because they describe how tools might support or transform the everyday work of users (Carroll, 1995). Scenarios provide guidance to designers as to key functional requirements of a technology tool and the settings in which a tool will be used. We engaged participants in constructing scenarios as part of the design charrette. Each of the small groups developed its own scenario of use, which is described below in this section of the report.

The scenarios unfold in different scenes, representing different settings in which the tool might be used. In the text descriptions, we have put in *italics* mentions of the tool and its use, to highlight potential functional requirements of the tool.

All of the scenarios, the teams noted, are intended to reflect the cyclical nature of coaching work. There are longer cycles (e.g., the school year) of planning, acting, reflecting, as well as shorter cycles within those cycles that focus on specific goals for improvement agreed upon by coaches and teachers. Time varies that coaches have available to work with individual teachers, as does the frequency with which coaches are able to visit teachers.

As part of generating scenarios, participants made drawings and shared resources and drawings with us that could help inform designers' work. Some of these will be used to inform the initial designs of the interface.

It is important to know that although the three scenarios presented below are intended to be realistic portrayals, these are composite narratives that do not reflect every way that the tool could be used. In addition, we have elaborated some of the scenarios below beyond the initial groups' work but in ways consistent with the overall direction of the scenario, to provide details that may be useful for a designer.

A Scenario for a Head Start Coach Working with a Group of Teachers in Centers¹

Scene 1. A group of coaches meets with center leaders and managers in the summer to set agency priorities and goals. The center leadership reviews progress against key goals, using student data and data collected from coaches about the focus of their

¹ The scenarios of two groups were so similar that we have combined them here.

activities *displayed on the tool*. A graph also shows progress in one area where the center has decided to put emphasis, and where teachers are also implementing varied instructional activities – literacy. The student data include CLASS and ECERS scores, and there is curriculum data on the Creative Curriculum. The group notices that among their priority goals, mathematics is getting less instructional time than other subjects. In addition, on the CLASS, the scores are lower on instructional supports than on the other two subscales. The agency decides to place emphasis on improvement in both areas, and the group discusses how coaches may help with the process.

Scene 2. Coaches meet with site directors individually, and review agency priorities. The site directors and coaches reaffirm their commitment to jointly negotiating the goals of coaching with coaches individually, but also that they will give emphasis to improvements in the target areas (mathematics, instructional support) if that teacher needs help in one of the two areas of focus. *Using the graphical displays of the tool*, the coach reviews the center's data with the center director, discovering that both areas of focus could use some improvement. The coach brings additional data to the conversation, *showing a distribution of individual students' scores (anonymously)*. The distribution shows a few students have extremely low scores, drawing down average scores. These children present significant challenges to teachers. *In one class, 10 of 17 children have an IEP, and the staff survey indicates teachers are struggling with their challenging students*.

Scene 3. The coach and individual teacher sit down to formulate an action plan for the year. The discussion begins with a discussion of the teacher's self-assessment, completed ahead of their meeting. The teacher is one of the many who report having particularly challenging students. The coach and teacher agree that strategies for individualization will be their primary focus, even though the overall agency priorities lie elsewhere. They make a plan for several visits, and *using the tool, identify a few evidence-based practices for the teacher to research*. The tool links to a video showing the practice being implemented by an expert teacher. The practice they agree upon as the initial focus is an initial assessment of students, which is intended to get to know their individual strengths and weaknesses. The pair will jointly assess two children who are likely to be challenging to the teacher during their session, while the assistant teachers supervise the play of the other children.

After the meeting, the coach *enters the agreed upon action plan into the tool and emails it to the teacher* to check for mutual understanding.

Scene 4. Prior to visiting the teacher's class, the coach sends an email reminder about the focus of the session. The two take turns observing children and *taking notes on them*, providing the teacher with an opportunity to see how the coach elicits students' thinking, which incorporates strategies shown in the video but that the teacher hasn't tried before, and how the coach records what she sees. When it is her turn, the teacher tries one of the strategies, and *makes her own notes about the child*.

After the session, the coach makes some notes about what she saw in the session, as does the teacher.

Scene 5. The pair debrief, *calling up their notes and joint reflections in the tool*. After they look at what one another wrote, they put the tool aside and discuss what they saw as strengths in one another's approaches to observing and noticing children's strengths and needs. They discuss plans for a next observation, with a focus on a different set of children. At the following session, they agree, they will begin to develop a list of individualized strategies they could use to address the learning needs of the children they have assessed so far.

At the conclusion of the meeting, the coach writes up the progress they agreed they have made in the action plan and updates the plan to reflect their new goals and planned activities.

A Scenario for a Head Start Coach Working Online with Teachers

Scene 1. Prior to an initial meeting, *the coach and teacher complete and read each other's profiles*. The coach has an initial individual discussion with a teacher in real time (Skype or phone) so they can get to know each other. They move on to goal setting, and decide the teacher will videotape a small group activity and post it so both parties can watch it and discuss it.

Scene 2. The teacher leads a small group activity and videotapes the small group as she works with them. *She then uploads the video to the tool for the coach and she to discuss in their next meeting.*

Scene 3. In the coach's office, the coach watches and *posts a few questions to the teacher*, such as, "How did you encourage children's problem solving skills? How did you meet your goals?"

Scene 4. In their next meeting by Skype a week later, the coach and teacher review progress on the *documentation template*. They identify and *record decisions* about next steps together in the documentation template.

Scene 5. After the teacher has led another small group activity and uploaded the video to the tool, the coach prepares an email with some prompts for reflection. She relies on a *bank of email openers and closers and reflective questions that are part of the tool*. She *looks up suggestions related to a problem the teacher reported having with two children who refused to share materials in the activity*. She *finds a few videos in the resource library*, and *sends off the email with a set of reflective prompts and links to the resources she has found*. That's a good thing to discuss in meetings of coaches. Coaches could contribute to such a bank.

Scene 6. (In the middle of the cycle). The coach joins a weekly conference call of coaches and says that so far her assistance regarding small group instruction hasn't helped teacher. There is a *virtual place where the coaches also have a brainstorming online space/chat room*. Other coaches recommend working with the teacher to do lesson planning, linking activity ideas to the framework. The coach tries this with her teacher in their next meeting and they both find it to be a very valuable experience.

Scene 7. Once a month, a small group of teachers attend half a half an hour conference call (or possibly chat). The coach *presents a short video* that they look at and talk about, and encourages the teachers to take leadership of the group. For another meeting, the teachers *put in some data about their classrooms, which is aggregated and they can review together (with sources being anonymous)* in a future session.

Scene 8. A few weeks later, the coach talks with her teachers about what is coming out of their classroom observations. The coach notices a pattern across the teachers where she (the coach) thinks that they are making progress, but the supervisor sees problems that the coach didn't expect. The next week the coach facilitates an *online discussion forum* around how the coach and teacher and supervisor can better communicate and understand what each other thinks is important.

A Scenario for a Head Start Coach Making Home Visits to Families

Scene 1. Sally, Missy, Jasmine and their colleagues are gathered for a professional development session at the agency where they work. Their organization has decided to focus on job-embedded professional development for home-visitors. Desi, who has been trained by people from NCQTL, gives her colleagues a tour of the tool, *which runs over the internet*. The tool is systematic and consistent, but not to the detriment of meeting unique, individual needs. Management explains what's different, noting it supports integration with an annual calendar of activities. Presenting the annual schedule.

Scene 2. Desi is working with Sally and Jasmine together to help them get up to speed in using the tool. Each of them gets their own *log-in*. They think about situations where they might use the tool, and role-play them as a group. Sally and Missy give Desi some feedback about the need for tutorials that show people doing coaching – that would be helpful for them. They would like to *incorporate video of themselves or the coaches who are their colleagues*.

Scene 3. Desi brings back some video she is able to locate, and Sally and Missy *watch the videos together through the tool's web interface*. They watch videos related to *some other coaches' work with families, as well as some videos of parents interacting with their children*. They make a plan to use the tool with a small number of families and then check in with one another after a few weeks, at their next regularly scheduled meeting.

Scene 4. Jasmine is out in the field, conducting a home visit. The main purpose of her home visit that day is to engage the children and caregivers in some fun language games. Her goal is to help the parents see that even though they may not be the best readers, they can foster their children's literacy development. She asks permission to record herself helping the family, saying that she is always trying to find ways to do her job better. She reassures the family that only she and her supervisor will see the video. They agree, and Jasmine turns on a *small camera on her iPad to begin recording their interaction*. The video is uploaded through the tool's Web interface.

Scene 5. Jasmine and Desi meet together to discuss the video. They use a protocol for coaches to use to reflect on their own coaching activities as a guide. On the basis of their conversation, they agree that Jasmine might do well to bring more varied games for the family to choose from to play together, so that the games remain engaging for the duration of her visit.

Scene 6. Sally, a family coach, finds that while some ways of using the tool are going fine, but some things aren't going smoothly. Sally and Desi, her supervisor, debrief, using the log of how Sally's the tool as a way to jog their memories of use. In reviewing what went well and what didn't, Desi makes a note to provide feedback to the developers on how to better support *links between activities and videos accessible through the tool and the different aspects of the HOUSE framework*.

Priority Requirements for the Tool

After each group constructed one potential scenario of use, we led the group in a brainstorm of requirements that were reflected in the different scenarios. We asked participants to abstract from their scenarios key functionalities of the tool. After constructing the list, each participant was given five “votes” to indicate what requirements—from their perspective—would meet the most needs of the different personas they had constructed. This list shows all the priorities generated, in descending order of the number of votes they received.

For requirements receiving multiple votes, included is a rationale that reflects the discussion after voting of why these particular requirements surfaced as most important.

Requirements Receiving 10 or More Votes

Display the Head Start Early Learning Outcomes and HOUSE Frameworks and link all resources to an element in these frameworks (14 votes)

All of the resource should be linked to these frameworks. Although there is a desire to support multiple models of coaching, the NCWTL is committed to promoting evidence-based practices for improvement.

The tool should allow the coach and teacher to view, post, and store picture, video, and audio files (13 votes)

Many of the scenarios included video as a tool for reflection. The ability to share and reflect on videos is part of many coaching models, because it is a powerful tool both for self-assessment and for anchoring discussions between coaches and teachers.

Requirements Receiving between 5-9 votes

Tools for building an action plan that includes a way to select from among a bank of possible goals, as well as to enter individualized goals. Action plan requires that coaches align goals entered to a part of the HOUSE framework or Head Start Early Learning framework (9 votes)

Action planning is common to most models of coaching. Action planning makes transparent the goals of coaching to both coach and teachers, and it clarifies the joint work of the coach and teacher. The action plan should make clear who is responsible for what. It is a living document, to be updated each time there is an interaction between coach and teacher.

Resources for professional development for coaches: Help with action planning, including tips and video of other coaches doing action plan (8 votes)

Many coaches lack specific preparation in coaching and in many of the content domains where they are expected to advise teachers. Professional development resources are critical for bridging the gap for coaches and linking them to a network of coaches from whom they may learn.

Link to assessments many Head Start sites use for supervisors (e.g., self-assessment, teacher professional development plans) for collection and aggregation of data (6 votes)

Many coaches have dual roles of coach and supervisors; though not ideal, this situation means that coaches are likely to have reporting responsibilities. For skeptics, being able to streamline data collection and generate useful reports may be a motive for them to adopt the tool and to use it also for coaching purposes.

Tool for reflection on video; checklist or way to walk through it together, linked to some common important goals (e.g., related to teacher-child interactions); self-reflection, coach reflection (6 votes)

This requirement is linked to the requirement for video upload and storage. It would support reflection, a key activity of coaching.

Task list generator: Develops list of tasks for coach across multiple engagements (5 votes)

Coaches have multiple responsibilities to different teachers as part of their jobs. This tool could facilitate their tracking tasks associated with each teacher but in a single list.

All forms (e.g., action plans) must be linked to research-based models of coaching (5 votes)

As with the concern that all resources be evidence-based, the practices that the forms codify or support should be themselves linked to research-based models of coaching.

Requirements Receiving 1-4 Votes

Provide a personalized log in for teachers and coaches that directs users to relevant content for them (4 votes)

A personalized log in is critical to address privacy needs of users, and also to allow for resources to be directed to users based on their goals and needs.

Create a documentation template that allows teachers and coaches to construct narratives of their work together and to track meetings with one another. The template would contribute toward a portfolio of practice for the teacher (4 votes)

The documentation template may be an analog to an action planning template (if the latter is conceived of as a living document). Or, it may serve as another tool for self-reflection for teachers. As a form of self-reflection, the documentation template might take the form of a narrative of a teacher reflecting on changes in their practice over time.

Portfolio of the teacher-coach relationship (4 votes)

Such a portfolio would serve a similar purpose as the documentation template or updated action plan (see above).

When working with a teacher, when one logs in, the site puts you at the “present” in terms of your goals and progress as part of the action plan (4 votes)

If used as a living document, an action plan could become quite lengthy. Instead of having to scroll to the bottom of the plan to identify current goals, the action plan's current goals and most recent activities would appear first or at the top of the page.

Tool to remind coaches of “active ingredients” of coaching that are present/available when coaching (2 votes)

Some scenarios indicated the coach might want to use prompts to remind them of the broader frameworks that should guide coaching or prompts for specific situations (e.g., negotiating an action plan).

Way for coaches to construct graphical summaries of progress (teaching and learning outcomes) for a group of teachers (1 vote)

Resources for teachers about what to expect from a coach (1 vote)

Requirements Receiving 0 Votes

Organizing prompts for reflective questions

Supervisors can see but coaches and teachers decide what to share

Always have a navigation bar that is set up with the tools, house, and other links like “my visits”

Coach log, tracks resources and actions

In action plan, you can click to get more information about relevant part of the framework. Resources become integral to the plan.

Include forms with check boxes, tallies

Tutorials in the tool, with video and vignettes that a coach of a coach could use

Access depends on role: supervisor, home visitors, coach, teachers.

Include rationale for frameworks, in brief, to bring everyone on board

Summary report of action planning over a period of time (~ 3 months)

Facilitate transparency of respect to focus of session; email reminder of focus

At content/site level, ability to show correlations of practices to outcomes

Post questions for resources, to anyone, self-chosen network (like facebook), moderated by experts and authorities.

Resources for helping home visitors negotiate goals with parents

Uses action language related to our purpose to prompt you through the process (e.g., what are you doing with this teacher today)

[Link to calendar](#)

Discussion of Key Requirements

Many of the key requirements that received many votes reflect common elements to most research-based coaching models, participants reflected. In particular, two large clusters of requirements focused on *support for reflection on videos of practice* and on *action planning*.

We invited discussion of requirements that received fewer votes, specifically asking participants about concerns as to requirements that to them were important, even if they did not receive many votes. The personal log in was important to one participant, because it was critical for ensuring confidentiality and building trust. Another noted that many of the requirements seemed more tailored for center-based coaching of teachers, and that the requirements should be checked against the scenarios of the different groups. In addition, requirements for the tool to be useful in coaching in a family child care setting were important to one participant. Another noted that the value of aggregated data and reports got fewer votes than expected, even though data displays figured in each of the scenarios.

Some of the high-priority requirements are likely to present challenges both in design and development. Small, portable devices may have the advantage of being usable in a wide range of settings, but they may break. Keeping content fresh and up to date will require an active curator of content linked to the tool. The different requirements identified as core may best be implemented as several tools, rather than as a single tool or online environment.

There are likely to be other challenges to implementation. Sharing video requires that teachers and coaches have appropriate permissions from caregivers to share video that includes their children, per federal FERPA requirements. Agencies will likely have varying capacity to support technology access and troubleshoot problems that will inevitably arise. Resources will need to be dedicated to planning and implementing professional development to use the tool itself.

Recommendations and Next Steps

The NCQTL Coaching Team should establish a design and development team that can use scenarios with existing software to test some initial potential uses of the tool. The team should work with software developers to identify high priority requirements, as well as to identify which requirements will be difficult and easy to implement into a technological infrastructure. The team should also undertake a conceptual analysis of some of the key design tensions that the charrette surfaced, particularly with respect to the protection of privacy versus free sharing of resources to promote learning, standardization versus customization, and concerns related to content-based coaching.

This team should also decide upon two foci for building out content of the tool. Two potential areas are the Foundations of the HOUSE framework and literacy. Both have a strong research base to support coaching and improvement of teaching. They also represent improvement that is domain-general (e.g., quality of teacher-child interaction) and that is domain specific (e.g., learning letter sounds). These may require different kinds of professional support for coaches, so testing in both kinds of domains is important.

The SRI and University of Colorado research teams can conduct observations and interviews to inform development and determine the conditions under which the tool facilitates or interferes with the ongoing work of teachers in late fall 2011 early winter 2012. The testing should happen in a range of contexts that reflects some of the diversity of scenarios and student populations Head Start serves. The team identified Native American communities as ones where improvement of teaching and learning was a key goal; efforts can be made to include such communities in user testing.

We also propose to convene the design and development team to review results of the initial testing in winter 2012. At that convening, as a group, we can decide upon key requirements that should be implemented in a beta version of the tool.

Building and testing of a beta version of the tool(s), as well as development of initial designs for professional development to use the tool, should take place in spring 2012. The content should incorporate results of the literature review into the content of the tool. Our understanding is that a development team at the University of Washington will undertake this work; however, the capabilities for such development also exist at SRI.

Over the following year, we recommend conducting ongoing usability testing of the beta version to inform iterative redesign of the tool. At some later time, when it is judged that the tool has sufficient content and is usable to a wide range of users, a test of its efficacy should be undertaken.

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