

ROLE-BASED LEARNING: CONSIDERING IDENTITY AND PRACTICE IN
INSTRUCTIONAL DESIGN

By

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CHAPTER I

INTRODUCTION

The “learning” in the phrase “design of learning environments” has often been defined in terms of constructing new understandings in a domain of knowledge (e.g. Bransford, Brown, & Cocking, 2000). The literature in the genre of instructional design have traditionally focused on domains such as secondary science and math education or engineering (e.g. Linn, 1998). Explorations of how social knowledge is learned, meanwhile, traditionally focus on emergent phenomena in naturalistic settings (e.g. Lave & Wenger, 1991). This paper seeks to integrate a view of learning as transforming identity and practice through experience reified by reflection and participation along a trajectory of role change in a community of practice (Lave & Wenger, 1991; Wenger, 1998). This paper takes as its premise that learning to perform a professional role in a domain involves more than the acquisition of knowledge propositions in that domain; learning a role transforms identity and practice (Wenger, 1998). The study conducted for this dissertation explores how people define themselves in relation to their professional practice when they learn a new role. How people think about themselves as practitioners and about what they do is the central focus of the investigation. The question central to this study goes beyond what knowledge to include in an instructional design; the question this study seeks to examine is who the learner becomes through the experience of the learning.

This dissertation proceeds in six chapters. Following the Introduction, Chapter 2 draws upon research literature in the learning sciences to define some of the key concepts and boundaries of the study, and establishes the research questions and the context of the study. Chapter 3 presents the methodology for the study and elaborates on the intervention designed and employed. Chapter 4 presents the results of analyses of each of four data sources used to compare the Intervention and Control groups in the study. In Chapter 5, the data are discussed in order to understand the effects of the designed Intervention. Finally, Chapter 6 presents an exploration of the data in order to construct a situated understanding of role change, and concludes with design principles, limitations, and areas for further exploration.

CHAPTER II

REVIEW OF LITERATURE

What are roles?

We use the word “role” in our daily language. Many times we mean “function,” as in “The role of insulin in the metabolism of glucose is...” Other times we mean “responsibility,” as in “The teacher’s role is to keep the students on-task.” In the field of social psychology, roles are the constructs of identity in our cultural and social contexts (Aronson, Wilson, & Akert, 1994); social roles come with sets of norms, values, and expectations for language use and behaviors people adopt in interacting with others in a particular society. Actors play a role when they portray a character, picking up a set of scripted dialogue and actions to carry out; the word “role” in fact originated in this theatrical context. Its association with function, responsibility, and performance all inform its choice here as a unit of analysis for studying professional identity and practice. The connotations of the term “role,” such as expected competencies, defined relationships with peers, parameters that guide performance, situatedness of performance, and criteria for evaluating performance all will be useful here for investigating its relationship with identity and practice.

In exploring learning from a social perspective, Lave and Wenger studied groups of workers with a common language and work culture, a unit of analysis they called communities of practice (1991). Practice is defined as “doing in a historical and social context that gives structure and meaning to what we do” (Wenger, 1998, p. 47).

Communities of practice are made up of the practitioners of knowledge in a domain, such as midwives and birthing children, or claims processors and paying insurance claims. These practitioners share a common terminology, set of skills, and way of thinking about problems in their domain. Newcomers enter into the community of practice through legitimate peripheral participation, the process of learning the competencies and social norms of the group, common problems members encounter, and the unspoken rules and guidelines that lead to successful practice. Over time, as people learn the necessary skills and move on to more complex tasks, they move closer toward full participation in the community.

Roles, for the purposes of this paper, are socially-defined groups of people who are guided in their domain of practice by an established set of heuristics for thought and action. Roles are a group construct, not an individual one; for example, if you interview two different firefighters about their jobs, they will give different answers to some questions, and similar answers to other questions. The similarities that you would find across a sample of many firefighters would give you a good definition of the firefighter role. Adopting and identifying with a role guides thought and action (Lin, 2001b; Ogbu, 1994). People performing a certain role share a common set of knowledge about their domain, what we may call their area of expertise. But adopting a role is more than simply mastering a body of domain knowledge; it is the process of identification that complements domain knowledge that makes the person able to assume and perform that role. Roles are learned through the compilation of experiences with situations in their domain of practice, learning from peers, mentors or (literally) role models about how to

interpret and attribute meaning to those experiences, and defining the norms and expectations for performance of that role in a community of practitioners.

Roles are constructs that are carved out of the multiple, overlapping identifications with social groups in people's lives. For the purpose of this paper, a role specifically is bounded by those aspects of identity that overlap in a professional domain of practice. A person may self-identify with a number of communities, through participation and through non-participation, belonging and exclusion. For example, someone may be a nurse, a mother, a wife, a Democrat, a Methodist, a cyclist, and a cancer survivor. The study proposed here would draw a boundary around those aspects of that person's identity that form the foundation for their performance in a professional community of practice, and further, would define as a role those aspects of performance common to other practitioners in that community of practice. With this example, our person's identification as a nurse provides the foundation for her performance in her professional community of practice with other nurses. Her self-identification in other areas, such as being a cancer survivor, or a mother, or a Christian, may also be a part of her foundation for her practice as a nurse. Further, her perception of her identity may be as these things first, and that they are inextricable from her practice as a nurse. However, only those aspects that are common across practitioners in her community of practice constitute the definition of the role of nurse in that setting. It is in this way that role is differentiated from identity. It is worth noting that restricting the definition of role in this way in no way diminishes or minimizes the identity of individuals; one can be a mother, a cyclist, a Democrat, all of these things and still perform the role of nurse as defined by her community of practice. A professional role should not have the connotation of being

a cog of industry; being a nurse is no less a human experience and social enterprise than being a church member, a partner in a marriage, or an amateur athlete. There is also a difference between a professional role as a nurse, and a social role as an employee of a company, a distinction that will be elaborated upon later in this paper.

The temporal nature of identity is important to consider in defining roles. Identities are constructed over time, are in continuous change and open to reinterpretation and reattribution. Wenger (1998) conceptualizes identities as complex trajectories that move through different social contexts, through time and space. A person's identity can be defined at a point along a trajectory but is not some state that is achieved or acquired. Roles, though, are more stable over time, though their definition is open to negotiation and change. Communities of practice sustain themselves over time through reproducing its core practices in new members, resisting change from unwanted influences and negotiating the tension between the new and the established participants (Lave & Wenger, 1991). Through the process of legitimate peripheral participation, people learn to practice in ways that are new to them but are established in the community; thus they learn to become participants and belong to the community. Recent work by Lave has characterized this process of becoming and belonging not as a stark all-or-nothing, newcomer vs. old-timer contrast, but rather one of change along a continuum of identity. Newcomers to a community of practice do not lack an identity; rather, over time their self-concept changes as they forget some old ways of being and learn new ones, becoming blind to some aspects of their lives as other aspects become salient.

Recently, some researchers have differentiated communities of practice from activity groups, short term groups formed for a specific purpose. These conceptions of

context are still too narrow when one considers the lives of the people involved; for example, students coming together for a one-week science camp may learn something about scientific method. Considered as an activity group, the focus of studying learning in this setting is on the content of the activity; however, considered as a community of practice, the setting is wholly inadequate for legitimate peripheral participation in a community of scientists (Hay & Barab, 2001). The focus on scientific content, however, does not capture the learning that occurs for these students, for example, as people who come together to know each other socially, whose perception of the affordances in their lives might be expanded by this activity. For example, they learned quite a bit about using computers, about career paths that exist in the work world, and about their own aptitudes and preferences for scientific activity; none of these possible learning experiences that consider learning as transforming the person's identity were examined in the study, however. In another domain, research in industrial and organizational psychology tends to focus on understanding and improving teamwork, management skills and employee satisfaction (e.g. Washington, 2000), but tends to treat learning as a "black box."

Roles have been used as a concept in research in education before. The genre of cooperative learning (Cohen, 1994) often sets up conditions for learners to cooperate together on a project and defines roles for each of them to adopt for the duration of the project. The term role in this genre tends to be defined in terms of required tasks and proscribed interactions, such as keeping the group on task or providing help to a student reading a passage of text. Roles have also been invoked in education through the use of role-play as a technique for learning or engaging in simulation. Often, these role-playing

scenarios consist of a surface-level description of the role to be performed, such as taking the role of Gandhi in a simulated international exchange about science (Sugar & Bonk, 1998), and the focus in these scenarios is to develop understanding of the content knowledge in a particular domain rather than on the experience of being in that situation. Finally, roles have also been used in goal-based scenarios (Schank & Cleary, 1995) to engage learners in simulation of a particular type of domain situation; however, this application also focuses on a set of tasks or a “mission” and the notion of context is limited to a “cover story”. The limitation of the concept of role in each of these examples in educational research is that roles defined by their tasks do not sufficiently address the social context of performance as a practitioner in a domain.

Learning is a process of people attributing meaning to their experiences (Wenger, 1998). When a person is introduced into a new setting, such as a student entering school on the first day or a new employee entering a work environment, parts of their experience will be familiar and recognizable, and parts will not be. The parts that are, are because of prior experience made meaningful in similar settings. The parts that are not will become so only through learning. A new employee must learn what is expected of them in this job; what knowledge and skills they are expected to master; and what their relationships are to their co-workers, including who reports to whom and who relies on whom for information, advice, skills, or products. In learning these things, the employee forms an identity of how they relate to others, what tasks are their responsibility, and what they can be considered an expert on and who they can consult about things they do not know (the roles of others). Furthermore, the employee learns from the others what the communal history of the group is, what precedents are set, and what the unofficial “rules to live by”

are. These things are crucial to the employee being able to perform their work, and yet these things are not necessarily written down anywhere in an official description. They must be learned for the employee to achieve membership in the community of that office, and yet the reason the employee is there is to produce, or process, or manage, or communicate something relevant to the business of their employer. Learning to participate as a member in that community of practice is crucial to the employee performing the function for which they were hired, yet they were not hired to form an identity and participate in a community of practice; they were hired to accomplish something for the company. However, asking the employee to try to step into a setting without prior experience and without time to learn the role knowledge of goals, expectations, and relationships, is effectively prescribing failure and disconnection for the employee. Yet, this is what we do to students in school when we present them with facts and skill tasks in a domain without giving them the knowledge of why the domain knowledge is important, how people apply the knowledge in authentic settings, or how the domain is practiced as a system of people collaborating and communicating (Resnick, 1987). We need a theory of instructional design with a focus on people in practice, to complement theories that focus on domain knowledge. The epistemology of such a theory should have as its focus the construct of role knowledge.

What is role knowledge?

Research on learning and learning environments has documented the importance of structuring knowledge in a way that facilitates learning. For example, readers of a text passage about organization and procedural steps have difficulty comprehending it until a

title is placed before it, such as “doing laundry” (Bransford, 1979). Research on schemas, prototypical scripts that activate expectations for situations, shows that organizing knowledge facilitates recall of information (e.g. Anderson & Pichert, 1978). Providing learners with a way of organizing knowledge to improve learning has been the focus of many instructional innovations in science, for example (Linn, 1998). The organizational structure these environments provide is based on topics, hierarchical groupings of information around a concept. The concept is usually an abstract idea, such as kinetic force, or ecosystems. Another way to organize knowledge is around a problem situation, such as the need to transport a wounded eagle from a meadow to a veterinary hospital in the least amount of time (CTGV, 1997). Situated or anchored instruction environments locate knowledge in its context (Brown, Collins, & Duguid, 1989).

However, the definition of “context” in these types of learning environments is constrained in a particular way. Many of the learning environments created from these situations leave out the perspectives of the people who apply their knowledge in that situation. What’s left is content knowledge situated in an impersonal, and therefore incomplete, context. In many learning environments, the developers are guided by the structure of knowledge in a domain, such as light and energy (Bell, Davis, & Linn, 1995), atmospheric systems (Gordin & Pea, 1995), or atomic structure (Dede, 2000). Researchers have investigated how student learning has been organized around instructional topics versus around domain concepts; for example, students solve physics problems by matching surface features of the problem to whichever topic in their course seems the best match, instead of understanding the underlying concept (Chi, Feltovich, & Glaser, 1981). Knowledge is presented in the context of their physical phenomena, such

as studying light and energy in the context of seeing white or black objects at night (Bell et al., 1995). The focus of these environments is on teaching students how to apply domain knowledge in a situation whose parameters are artificially proscribed. Even in so-called apprenticeship learning designs (e.g. Sugar & Bonk, 1998), the interactions primary to the study are of students interacting with the domain situation, sometimes with each other, but not truly co-participating with members of a community of practice. The implicit assumption of this type of instructional design is that contexts for domain knowledge are primarily physical, not social, in nature.

When a student comes into a classroom for the first time, their primary concerns are with learning what will be expected of them in that class. They ask, will the teacher be nice? Can I ask questions? Can I talk to my friends? What does the teacher expect me to achieve, and how will I know when I have done well? Where will I sit? When does the bell ring?

Similarly, when people take a new job, their primary concerns are with learning what their role will be and what will be expected of them. They ask, what am I expected to know and be able to do? What is the relationship of my position to the positions of my coworkers? How will I know when I have done well? Where will I sit? When is my break?

People entering new environments want to know how to make sense of their place in the environment, what is important to learn, what will be expected of them, and how others will relate to them. The process of learning one's role in a situation is something that everyone experiences at some points in their lives. Through modeling, mentoring, or comparing and contrasting multiple definitions, people construct their own definition of

their role, and as they perform their role according to that definition they receive feedback and learn to refine it. When people learn their roles they feel more competent, become more comfortable in the situation or environment, and are better able to guide their learning in the situation. Knowledge of their role gives people a way to make sense of their working, performing, or learning environment. Learning one's role provides a structure for organizing the information that they are presented with in their environment. As employees learn their roles, for example, they are able to guide their learning toward the knowledge that will be most useful in helping them achieve their goals.

Role knowledge, then, is the set of thoughts and beliefs about the role that enable a person to generate ideas and acts that are consistent with the social definition of that role. Role knowledge enables people to perform appropriately in a role, where appropriateness is defined as accordance with socially accepted acts for people who place themselves in that role. Role knowledge affords interpretation of experiences in ways consistent with how veteran members of that community of practice would interpret experiences, and further affords the ability to tell the story of those experiences that reflects the role-appropriate interpretation. Role knowledge affords knowing the social conditions for when and how to apply domain knowledge, and not knowing how to act in a given situation may signify lack of role knowledge.

An example illustrating the importance of role knowledge is found in cross-cultural studies of situated learning. When anchored instruction materials are transported to another cultural context, such as using the New Adventures of Jasper Woodbury in a Hong Kong classroom, the assumptions inherent in these materials become apparent (Lin, 2001b). Although the Jasper environment situates mathematical knowledge in an

authentic physical situation where that knowledge would be applied, the teacher and students in Hong Kong had a great deal of initial difficulty situating the material with respect to themselves (Lin, 2001b). The Jasper learning materials carried cultural assumptions for classroom use, for instance that the teacher would be a guide for students as students independently generated and researched mathematical sub-problems. Without sharing these assumptions about their roles, the students did not know how to be students and the teacher did not know how to be a teacher in the Jasper context. The Hong Kong teacher and students had to adjust to this new and different model of pedagogy through a process described as reflective adaptation (Lin, 2001b). Once they revised their role knowledge and knew what their goals were and had gained a perspective on the Jasper learning environment, the students and teacher could use the materials, in their own way, to learn the mathematical content. This example shows how role knowledge enables the learning of content knowledge; even though the content knowledge was situated in an authentic physical context, the Hong Kong teacher could not teach and the students could not learn until they had situated the materials in a social context.

To investigate the construct of role knowledge, I conducted brief interviews of fourteen employees at an educational research center at Vanderbilt University. I wanted to understand how people defined their roles, and how (in their words) they thought that their roles influenced their learning in their domains of practice. From these interviews I learned that roles provide the people I interviewed with a perspective and with goals. The perspective of the role affects how people come to see new situations and new opportunities for learning. At work, people identify their role with a job title, an identity that carries with it assumptions about what people who share that job title do and the

knowledge that they have. For example, a person who identifies herself as a Graphics Artist assumes that the listener shares a common image and definition of what that is. When prompted to explain what a Graphics Artist is, she is able to identify the tasks that Graphics Artists perform, the area of expertise they develop, and the interests they pursue. Her explanation of identity sheds light on her perspective on her community and her part in it. Roles also have goals associated with them, responsibilities and duties that people in that role are expected to perform. In the interviews, people commented that they continued to learn and "grow into" new areas of knowledge that helped them expand their role. Knowledge of the goals of their role is what allows people to decide what knowledge is most relevant to them. When people encounter a task consistent with their goals, they are more likely to learn the knowledge necessary to achieve that task.

One way that people pass on role knowledge is through narrative, telling stories of experiences that are especially relevant or that teach a point (Bers, 1999). In a similar way, experts apprentice novices in their domain through sharing stories of their experiences laden with important domain knowledge (Lave & Wenger, 1991). Think of experiential stories that have a moral, e.g. "The whole thing blew up in my face because I (or that other guy) hadn't set the thingamajig properly! And that's why you should always check the thingamajig yourself." As opposed to: "Instructions, Step 12: Check thingamajig before proceeding." For any given domain, the experts that share a core set of knowledge and practices are those people from whom a role is defined. The expert members of the community of practice are those who fully participate and reify knowledge in the domain. They are not only intimately acquainted with the goals, skills, and information of their domain, the very way that they perceive and think about

situations is guided by heuristics derived from that knowledge (Bransford, Brown, & Cocking, 1999). Experts' goals for practice and ways of thinking about their domain of practice are what define the role knowledge of people who create and practice knowledge in that domain. For example, the goals and ways of thinking that guide an expert firefighter contemplating how to contain a forest blaze are what define the role of firefighter. A team of firefighters communicates using a specific terminology that allows them to work together on common tasks. Likewise, roles define collaborative relationships by establishing expectations for the performances of actors in a system (Hutchins, 1990).

These are some situations that illustrate a type of learning and a type of knowledge that is complementary to, but somewhat different from, content knowledge. Knowledge of role, the perspective and goals of a person in a particular situation in the world, is an important guide for learning and performing tasks. Role knowledge provides the parameters for people to attribute meaning to their experiences in participating in a community of practice. The object of this dissertation, then, is a study of people learning a new professional role, with the intent of exploring how learning a role transforms the identity and practice of the learner.

Context of the study

Instructional design, as a discipline, has not traditionally considered context outside of a narrow conception of setting and prior knowledge (McDermott, 1999; Jonassen & Land, 1999). Processes for designing instructional materials have proceeded from two theoretical standpoints. The more traditional (Dick & Carey, 1996)

conceptualizes knowledge primarily as a set of discrete propositions that can be harvested from the knowledge representations of experts in a domain and packaged for transmission to the learner. More recently (Jonassen & Land, 1999) the theory of constructivism has been incorporated into instructional design, with the goal of using expert knowledge embedded in situations or cases to allow for a more discovery-oriented approach by the learner. The measures used to assess outcomes of learning in these approaches mirror the designs, with the focus on propositional knowledge. Instructional design for the purpose of identity transformation is a foreign concept within this discipline, as are methods for measuring learning as identity reconceptualization.

The genre of design research has explored learning in more naturalistic settings, employing more ethnographic methodologies. Design research is a methodology of iterative cycles of design, participation, analysis and revision in order to study the effects of a designed experience on the participants (Brown, 1992). Design research is formative and uses both qualitative and quantitative measures to gather information that can be used to refine the design of experiences toward a set of desired outcomes. Often, the designed experience is an educational intervention, with the set of desired goals being the learning outcomes for the students (e.g. Collins, Joseph, & Bielaczyc, 2004). Although not a true design experiment, the genre informed this study's selection of methodologies for evaluating learning in a designed situation.

The research conducted here studied the impact of including role knowledge in a design for learning at American Healthways Corporation. American Healthways is a company that provides care enhancement services to the members of health insurance plans. The company employs nurses, referred to as clinicians, who provide education,

support for behavior change, and standards of care from evidence-based medical practice over the telephone to the members of the health plans. Independent research has documented the health benefits to the members as well as financial savings to the insurers that employ American Healthways. The interactions that the clinicians have with members via the phone are what produce these outcomes. Thus, how clinicians conceive of and approach their role in producing positive outcomes for the health plan members is crucial to continuing that success.

To investigate the role knowledge of being an American Healthways clinician, I had conversations and conducted interviews with clinicians and former clinicians who had been promoted to leadership positions, as well as several other people involved in the design and operations of the company. I had access to these clinicians and managers as an employee of the company. The goal of these conversations was to get at what made the role of American Healthways clinician different from other nursing roles. These differences in how and why the nurses practiced in a certain way that they did not in their prior roles elsewhere constitute a core set of role knowledge for being an American Healthways clinician. From the interviews a set of aspects of the role emerged as central to the role. In follow-up interviews I compiled these aspects into a list so that clinicians could comment on their validity. The clinicians expressed agreement that these were the important distinctions between their role and other nursing roles.

<u>ASPECT</u>	<u>Description</u>
TIME	Focus on long-term health improvement over time instead of immediate critical care or symptom relief
NATURE OF CLINICAL TREATMENT	Focus on educating patients and behavior change, reducing symptoms and preventing trauma, instead of treating symptoms and trauma after they occur
POPULATION	Focus on total population health within a known set of people and conditions instead of stream from general public
MODALITY / PROXIMITY	Communicating through voice only and relying on remote sources and computer information system for all vital statistics and lab information instead of being physically present and able to gather information “hands-on”
SETTING	Care delivered in the patient’s home rather than medical setting; care delivered from a call center
STANDARDIZATION	Professional development is standardized to ensure consistency of reliance on evidence-based care
TECHNOLOGY	Using a different tool set, i.e. computer running a clinical information system instead of traditional medical equipment

Figure 1: Aspects of the clinician role.

These aspects of the role differentiate what it means to be an American Healthways clinician from what it means to be another type of nurse. These aspects are not intended to be an exhaustive list of the features of the role; for example, the list does not include clinical knowledge of disease conditions. Rather, the core aspects of the role of American Healthways clinician that differentiate it from other nursing roles involve education and behavior change, from a distance, over time, in people’s normal lives at home. By contrast, aspects of other prior nursing roles, e.g. hands-on immediate treatment of symptoms or trauma of people in crisis at a medical institution, are not a part of the role we want the nurses to learn and perform. From these differences, an intervention can be designed to facilitate learning the role of American Healthways

clinician. The intervention should give the learners a series of situations to explore and to imagine themselves as practitioners in that situation. The intervention should have the effect of reducing the common errors that new clinicians make, errors that result from a lack of understanding of the role or from still holding assumptions from their prior roles that are inconsistent with the role of American Healthways clinician. Some of these common errors correspond with one or more of the core aspects of role knowledge listed above. To learn what these common errors are, I interviewed Clinical Operations Managers, or COM's, who are primarily responsible for oversight of a team of clinicians, evaluating their performance and providing feedback and guidance. The COM's have experience with observing new clinicians and are thus a valid source of knowledge about the mistakes or incongruent assumptions that new clinicians make.

Some of the errors include:

Error	Assumption incongruent with role aspect
Clinician tries to do too much on one call; inundates member with information	TIME: clinician does not realize that they are engaging in a long term process
Clinician spends too much time asking questions about symptoms; tries to treat symptoms over the phone	NATURE OF CLINICAL TREATMENT: clinician's role is to support the member's self care through education, behavior change, and care compliance; member should see their doctor for treatment
Clinician asks questions that member cannot answer about their condition; becomes frustrated with lack of information	MODALITY/PROXIMITY: clinician's role is to empower member to participate in their own care and encourage the member to ask the right questions of their doctor, seek the appropriate tests and medications, etc.
Clinician does not take advantage of opportunities to ask questions or plan interventions regarding home environment	SETTING: clinician is not conceptualizing member in their home environment and not asking questions or planning interventions about lifestyle, arrangement of space and objects, safety, etc.
Clinician does not adhere to standards of care, "winging it" based on prior knowledge or opinion	STANDARDIZATION: clinician should rely on evidence-based standards set by professional organizations such as the ADA and AHA

Figure 2: Common errors of new clinicians.

The purpose of the designed Intervention of this study is to facilitate new clinicians' learning the core aspects of role knowledge for becoming an American Healthways clinician, and to evaluate the effect of this intervention on their performance of that role. In the current design for learning, nurses join the company and participate in training and mentoring with moments of explanation, tacit examples, observing modeled behavior, and gradually increasing in the centrality of their participation in the community of practice. The proposed intervention sought to manipulate these phenomena to design an experience that affords learning this role in an explicit way. The design is intended to replicate what would be the most meaningful experiences in

interacting with colleagues in the community of practice, organized by the conceptual framework of the role. These are organized around themes, where a theme is a concept that is interpreted and given meaning through multiple experiences over time. For example, one theme is that “we have more time” to talk on the phone with members about their health problems. Clinicians hear this from veteran practitioners, see this borne out in their own experiences, and then re-experience it in conversations with mentors. Upon hearing it, the premise is understood only propositionally by the new clinicians and has little meaning. As they begin to participate as an American Healthways clinician, though, they begin to attribute meaning to their experiences based on that proposition. Said another way, the role knowledge codifies the interpretations of experiences that are commonly held by the community of practice. Through multiple iterations of practice and interpretation organized conceptually by these themes, the new clinician adopts the ways of making meaning as a member of the community (Bruner, 1990). The role knowledge of American Healthways clinicians enables the nurses who perform that role to generate interpretations of their experience in a way unique to their role. Adopting the role belief that “we’re filling in the gaps in the health care system,” positions them in their new role perspective, where they have spent most of their professional lives in the ‘health care system’ that they now position as an “other.”

Role-based design has two underlying premises. First is that learning “changes who we are by changing our ability to participate, to belong, to negotiate meaning” (p. 226, Wenger, 1998). Learning to become an American Healthways clinician is a transformation of how they think about what they do as professional nurses. The transformation is one of kind, not simply of addition; the nurses entering employment are

not blank slates. They have accumulated life experiences from which they have already constructed a professional identity as a nurse. When new clinicians engage in legitimate peripheral participation with the community of practice, they are not simply being given more knowledge about the job of being a nurse. When clinicians make some of the common errors seen by the COMs, the problem is not that they just don't have enough knowledge about nursing. The experience of learning to become an American Healthways clinician is a transformation of that professional nursing identity with respect to the aspects of the role that differentiate it from other nursing roles. Providing an experience that facilitates that role change that makes more salient those aspects and prompts explicit articulation of that transformation is the intervention of this study. Said another way, a designed experience that helps the new clinicians differentiate their new role from their old roles, should change their self-concept in such a way that they more easily let go of their old ways of being a nurse and adopt and perform the ways of being an American Healthways clinician. Thus, the second premise is that experience creates a readiness for conceptual change, or a "time for telling" (Bransford & Schwartz, 2000; Schwartz & Bransford, 1998). Experience engaging in and struggling to make meaning from the practice of the work can serve to prepare the new clinicians for learning from a set of materials that offer an explanation for that practice. Taking these two perspectives from seemingly disparate theoretical genres is not meant to imply a new unifying theory. Rather, the two are both useful in this application, for understanding the complex social and cognitive learning that occurs as the new clinicians both learn how to perform new work and learn to adopt a new role.

As will be discussed in the next section, the design for learning to become an American Healthways clinician will be made up of cycles of experience and attribution of meaning to the experience. The process of learning a role involves many of these cycles of experience and interpretation, which will be analyzed as cycles of participation and reification and as “time for telling” events of experience and instruction. Both are examples of constructing meaning, though their focal constructs are different. For the time for telling principle, the focus is on presenting an explanation that organizes the learners’ experiences and provides understanding of those experiences in a broader context. For the process of participation and reification, the focus is on the social engagement between the new clinicians and the members of the community of practice, as illustrated in their reified objects, e.g. the stories told by the veterans, and the reflections written by the newcomers.

The learning experience this study attempts to describe can be thought of as a trajectory of change, along which are placed the artificial beginning and ending boundaries of the study. The participants are experienced nurses learning new ways of thinking of their practice and of themselves as practitioners. Prior to their joining American Healthways, they are “fully identified,” that is, they are not without an identity, and they come with ways of thinking about their professional roles as nurses in various settings based on their experiences and former communities of practice. The study ends at a point on a continuum of becoming and belonging in the community of practice at American Healthways. Farther along that continuum are stages of their first “Town Hall” meeting, or joining a group that takes walks after lunch, or becoming mentors themselves to a cohort of new clinicians. At all of these stages, clinicians are participating in the

community of practice at their Care Enhancement Center, interacting and practicing in ways that move them from peripherality toward centrality; the reality of the continuum of their lived experience is acknowledged, but for the purpose of this research a boundary for the study is drawn at the end of their Orientation.

As part of the context of the study, my position as both researcher and employee of the corporation is elaborated here. At the time of the study, I was an employee at American Healthways in the role of Learning Environments Designer. My responsibilities included the design and co-development of instructional materials for clinicians in all of the CEC sites, working with clinical subject matter experts to translate their knowledge into effective learning environments. In my role I had worked with some of the veteran clinicians at the CEC, and it was in this role that I conducted both the discovery process for describing the aspects of the role as well as the materials development described in the next Chapter. At the time of the study, I was also a doctoral candidate at Vanderbilt University, and it was in that capacity that I conducted the research. I was introduced to the new clinicians in both the Intervention and Control classes as both an employee of the company and a graduate student who was conducting his doctoral research. It was stated explicitly to all participants that the purpose of my presence there was to conduct research on the design of learning environments for my doctoral degree, and not to evaluate them or their performance for any company-sponsored purpose. A letter from the corporate Human Resources Director backing up that statement was available on request, and language elaborating that statement was part of the informed consent document that each participant signed.

CHAPTER III

METHODOLOGY

Overview

The study compared two cohorts of new clinicians during the four-week training period at the outset of their employment. The training for new clinicians consists of learning about the company and its operations, the clinical conditions for which the company provides care, and the use of the technology that the clinicians practice with. The New Clinician Orientation (Vye, Martich, & McBrian, 2003) utilizes a mixed model of computer-based and personal instruction, and takes place under the guidance of a facilitator dedicated full time to training clinicians. It is comprised of a set of challenges based on a modified Legacy inquiry cycle (Bransford, Brophy, & Williams, 2000) consisting of a multimedia anchor and supporting resources that provide knowledge about the challenge. Each challenge poses a situation and a set of questions to which the learners respond with their initial thoughts. These thoughts are shared in a group discussion, and then each learner consults the resources that support the challenge. Afterward, they share their reactions to the resources and reflect on changes in their thinking about the challenge questions.

Also during the training time, one on one mentoring is provided with an experienced clinician. The mentoring is a process of apprenticeship where the new clinician observes the mentor and gradually takes over the practice of conducting calls with the mentor's guidance. During the mentoring process, the mentors guide and

observe the new clinicians' performance on a set of competencies and provide feedback toward mastery of those tasks.

The study conducted here compared two cohorts of new clinician training classes. One cohort of new clinicians, the Control group, participated in the full New Clinician Orientation as it is currently composed. The other cohort, the Intervention cohort, also participated in the New Clinician Orientation, but the design of the experience was modified with an explicit focus on the role of American Healthways clinician, manifested in two ways. One manifestation of this focus was the language used by the Trainer and the mentors during classes and mentoring times. The other was a set of materials that provided story vignettes told by experienced members of the community of practice that prompt explicit reflection on the role. Data were collected in both groups in order to allow for comparison of the effects of the role-based design.

Participants

Two training classes of nine new clinicians each participated in the study. The classes are comprised of newly hired nurses who are joining the company. Participation in the New Clinician Orientation training is a requirement for new clinicians, and they must successfully complete the training before they can operate independently of supervision.

Some characterizations can be made about the demographics of clinicians typically hired by the company. Nearly all are registered nurses (RN) with experience in other clinical settings. A few new hires are respiratory therapists (RT) who work with patients with COPD and asthma, or registered dieticians (RD) who perform consultations

when needed. Most of the clinicians are female. Many are older, coming to American Healthways as a second career after an early retirement from other, more physically demanding clinical settings. These older nurses have 15-30 years of experience in nursing and have a great deal of clinical knowledge. Many express that they feel they no longer can keep pace with the physical demands of hospitals and other clinical settings, and they look forward to a role where they can draw upon their accumulated knowledge and experience to take the time to educate patients.

The participants in this study consisted of nine participants in the role-based Intervention class, and nine participants in the standard Control class. All 18 were female registered nurses (RN's) with experience in at least one other clinical setting. The mean number of years of experience were comparable between the two groups, $\bar{M} = 23$ and $\bar{M} = 17.78$ for the Intervention class and the Control class, respectively. The difference in years of experience was not statistically significant, $t(16) = 0.99, p = .34$.

Setting

Training classes are held in each of the company's eight Care Enhancement Centers (CEC) around the country, located near moderately large urban areas. Each CEC has a training classroom with 20-30 seats and computers, as well as a dedicated Clinical Trainer and supporting IT personnel. The challenge-based portions of the New Clinician Orientation occur in the training rooms, while the mentoring takes place "on the floor" of the CEC. The largest space of each CEC is comprised of open floor spaces with cubicles. Each full-time clinician has their own cubicle space with a computer, phone, and shelves for reference materials. Since much of the clinician's time is spent on the phone with

patients, the designers of the CECs pay much attention to ergonomics, and each cubicle space features adjustable furniture, headset phone attachments, and keyboard shelves in some CECs can even be raised to a standing height. During mentoring, new clinicians sit in the cubicle with their mentor, where both can attach their headsets to the phone. Varying among the CECs are features to accommodate clinicians' needs, such as a large kitchen and dining area, meeting rooms, café-style areas with Internet access (clinicians do not have Internet access from their desks), yoga rooms and nursing suites. Entrance to the CECs beyond the reception area is limited to prox-card access for security reasons, and all of the clinicians carry their prox-card with them.

For the conduct of this study, the Intervention was conducted with a class at the site in closest proximity to the author. Based on the size and demographics of the Intervention class, a comparable control was identified at another site.

Experimental Design and Measures

In order to examine the effects of a design for learning a role, a quasi-experimental comparative design was used consisting of an Intervention class and a Control class. Participants could not be randomly assigned to condition due to their being hired and trained in groups, and the size and timing of new hire classes are determined by operational considerations. The Intervention class used the materials designed to facilitate learning the role of American Healthways clinician. The comparison of the two groups can provide insight into how the role-based design influenced clinicians' learning of their new role. The data should also provide feedback for revising the design for future iterations of research.

Two specific theoretical perspectives converge in this research, which are reflected in the data collection methodologies, in accordance with recent research in the learning sciences (Hall, 2001). First is the cognitive perspective outlined in Bransford's work on the study of learning in designed learning environments (e.g. Bransford, Brown, and Cocking, 1999). Second are the ethnographic approaches of Lave and Wenger in their study of the social situativeness of learning (1991; Wenger, 1998). The measures in the study draw on these two backgrounds. Two of the data sources, the generative assessment and the CDP, draw on the principle that performance makes thinking visible. The other two data sources, clinicians' reflections on their role and the observation of cycles of participation and reifying events, draw on ethnographic methods to study the lived experience of the clinicians and the meanings they attribute to those experiences.

Measure	What?	When?
Reflective writing	Reflection on professional identity as a nurse	Beginning and end of Orientation; two points during Orientation
Observations	Observation, videotaping and field notes of classes and selected mentoring events	Throughout Orientation
Generative assessment	Written responses to case situations presenting a call vignette with a member	End of Orientation
Colleague Development Process	Formal evaluation and feedback session with mentor and Clinical Operations Manager	1-2 months following Orientation

Figure 3: Summary of data collection measures.

Clinicians in the Control cohort participated in the New Clinician Orientation as it is currently designed with the exception that they provided two written reflections that they would not otherwise do. At the beginning and end of the three and a half weeks

training, these clinicians were asked to write reflections on how they see themselves as nurses (see Appendix A for prompts). They were also asked at the end of the training to respond to a set of call vignettes (see Appendix B, also discussed below). These data collection tools will allow for comparison between the two groups.

The clinicians in the Intervention group were informed that additional materials would be available for them to access and view, and that they are asked to write responses to reflection prompts in an online document after they viewed the materials. Throughout their three weeks of the New Clinician Orientation, the trainer used language that focuses on the core aspects of the role when she facilitated discussions. Their mentors also focused on these aspects during their time with the new clinicians, scaffolding their learning to perform the role. On Days 5 and 10 of the Orientation, the new clinicians were prompted in class to go to the materials and write their responses to reflect on what they are experiencing and learning. Since the reflection is part of the role-based design, more of the reflection data was collected in the Intervention class than in the Control class. The new clinicians' reflections on their professional identity and practice are the first data point in the study.

At the end of their Orientation, this cohort also responded to the case-based assessment call vignettes; these generative responses are the second data source for the study. The case vignettes assessed ideal performance, that is, given a chance to demonstrate what the ideal of performance should be (in a setting without the cognitive demands on their developing fluency with the technology), does their conception of performance of the role correspond to the norms of the community of practice? Expert clinicians and managers rated the statements, questions, and implied clinical decisions

demonstrated in the responses according to a rubric. The rubric was used to rate what the new clinicians said, how they said it, and when they said it. The experts rated the appropriateness of the response in the context of the conversation based on their expertise and experience with calls. The rating was done anonymously, blind to group assignment.

Fieldnotes, brief interviews, and videotapes of class discussions and select mentoring sessions documented the observations of the Intervention class, which serve as the third data source for the study. In the first week of the typical Orientation class, the focus is given to teaching the nurses about the company, the model of health care that it provides, and about the model of work that the nurses will do. The second and third weeks of the Orientation classes have a focus on how to apply the nurses' clinical knowledge to their work on the phone with the members they will serve. During the afternoons of these weeks the nurses mentor with experienced clinicians in a mentoring experience that may be described as scaffolding (Scardamalia & Bereiter, 1994) or cognitive apprenticeship (Brown, Collins, Duguid, 1989). The new nurses observe their mentors, talk with them and hear their interpretations of the observed experiences, and then gradually practice taking on more and more of the performance of the role, receiving feedback and guidance from the mentor along the way. During this time, the mentoring clinicians are modeling the role that the new nurses are learning, guiding their adoption and performance of that role. In all, fifteen days of classes were observed, 15 SLP videotapes recorded the discussions in class and mentoring sessions, 24 brief interviews were recorded in class, and post-Orientation interviews were also conducted with each participant.

The observations of the classes and select mentoring experiences for the clinicians in the Role-Based cohort were analyzed with the goal of understanding the clinicians' learning of the role as a trajectory of change. Chapter 6 of this dissertation presents an attempt to "chunk" the observed experiences into cycles of participation in experiences and reifying events (Wenger, 1998; also Hay & Barab, 2001). To take a "time for telling" perspective on the learning experience (Bransford & Schwartz, 2000), we need to understand that such experiences happen all the time. It would be overly simplistic to draw the boundaries of the learning experience at the beginning and end of the three-week Orientation and to say, the first 14 days are the experience and the time for telling would be on the 15th day. Rather, we need to find the boundaries of the many smaller cycles of experience and insight, or participation and reification of interpretation, that occur within that time period. Bounding cycles of experiences and interpretation may allow us to chunk these learning cycles into units that can make up points along the trajectory of learning and role transformation that I am attempting to describe. These bounded cycles may provide a description for the situated learning of a role. In the post-Orientation interviews, the participants were asked to "tell their story" of how their role has changed from their previous nursing roles to their new role as clinicians. That question allows for comparison of the observed trajectory of change with the perceived trajectory of change. The analysis of the observations will serve as the third data source in the study.

By the end of the training, all of the clinicians will have demonstrated competency on conducting calls, working in the computer system, and knowledge of standards of care for diabetes and cardiac conditions. After another few days of

mentoring – the duration is determined by when the mentor and trainer feel that the new clinician is ready – the new clinicians graduate to the “floor” where they operate as full members of the CEC community of practice. Each clinician is assigned to a team, overseen by a Clinical Operations Manager (COM). During their first six weeks, the COM observes the clinicians’ performance and provides feedback both informally and formally. The informal feedback often comes when a COM listens in on the clinician’s calls (sometimes with, sometimes without the clinician’s awareness) and then provides specific feedback on some facet of the interaction. New clinicians also meet weekly with their COM, and sometimes with their mentors or the CEC Trainer.

Formal evaluation of the clinician’s performance comes in the first 4-6 weeks after training, using the Colleague Development Process (CDP). Each group of new clinicians participates in a formal evaluation with their COM or the Trainer, and their mentor. During this evaluation, the COM or Trainer chooses a time to approach the clinician and sit side by side with them while they work to observe at least one successful call. Based on this observation, the COM or Trainer writes up the observation on two levels, one being a set of ratings of the clinician’s interaction with members (using the CDP rubric described previously), and the second being an assessment of the clinician’s ability to fluently operate the computer system. The ratings of interaction with members are the variable of interest for this study. Following the observation session, the COM or Trainer schedules a meeting with the clinician and his or her mentor to provide feedback and establish goals for professional development.

For the purpose of this study, the CDP identified the types of performance errors and adjustments in the clinician’s thinking about the role, through the types of corrections

the COM has needed to provide feedback on. Feedback given to new clinicians that is more similar to the feedback given to more experienced clinicians served as an indicator of more advanced performance of the role. The correspondence of the feedback with that given to experienced clinicians was measured by having COMs at another site sort the CDP sheets into two groups, those they thought were feedback given to new clinicians and those they thought were feedback given to veteran clinicians. They performed the sort of the CDP records blind to name and to group. The CDP was used retrospectively only, after the formal evaluation has taken place so as not to influence (or appear to influence) the evaluation. The CDP serves as the fourth data source for the study.

These four data sources were used to compare the two classes. The reflections on identity were used to understand how the new clinicians interpreted the events they experienced and reified their changing role. The responses to the call vignettes were used to show how the clinicians would describe performance of the role in an idealized way. The observational data provide a situated description of how role change happens. Finally, the CDP data are intended to study if and how their new understanding of role has consequences for their performance on the job. The comparison of the two groups in the study addresses whether designing an experience that foregrounds role knowledge facilitates learning a role, and whether more fully and more quickly adopting the role measurably improves their performance.

Description of the Intervention

Context of the Intervention

In order to set the context for the modifications made to the Orientation for the role-based design, a description first is offered here of the typical learning experience of the Orientation. The Orientation class lasts for approximately four weeks, and during that time the nurses are taught the clinical content that they will need to know as well as the details of how they will perform the work. In the two classes I observed, the Clinical Trainers both acted as facilitators and guides for the new clinicians, consistent with the model for instruction designed in the Orientation materials (Vye, Martich, & McBrian, 2003). The nurses in both classes began their orientations having participated in two one-hour interviews with the HR Director and a COM, both of whom educate the nurses on the overview of the company and the work, and answer questions that they have. So, by the time the Orientation class begins, they are ready to learn with their immediate questions answered. The first five Challenges in the Orientation provide the background of American Healthways and the value proposition of disease management. These Challenges provide ample opportunity for the nurses to reflect on the traditional health care system. During the discussions in these Challenges, many negative feelings emerge about the current ways of providing health care in our country, and the nurses share their personal stories about their work experiences in other health care settings. The process of learning the American Healthways model of providing care is one of differentiation from other health care models. Affectively, the nurses differentiate how they felt about their prior nursing settings from how they feel about the perceived nursing setting at American

Healthways. These feelings also extend to how they define their roles as nurses, leading some to describe feelings of “burned out” and “fed up” with nursing in traditional settings.

During the first week of the Orientation, the nurses are challenged to think about the American Healthways model for “filling in the gaps in care” left in the traditional model. Cognitively, the challenge is to map their current definitions of “being a nurse” to the American Healthways definition of being a nurse. The salient constructs in the first week of Orientation are preventive care, education, health behavior change, and use of technology to support nursing care. As the class goes through the Orientation materials, many questions emerge about how they will perform the work, and comparisons to their previous performances of nursing work are inevitable. The response of the Trainer to these comparisons provides an opportunity to leverage the differentiating features of their prior and new nursing roles as teachable moments. The nature and intent behind that leveraging response was part of the focus of the intervention in this study, as described later.

By the start of the second week, the nurses in the Orientation class are forming bonds as a group, especially at the beginning of the Challenges that teach the clinical content. The clinical units (Cardiac, Diabetes, Respiratory, and Impact Conditions) require a pre-test and post-test at their beginning and conclusion, and the shared sense of anxiety about the tests and their new experiences further contribute to the group’s bonding. During weeks two and three of the Orientation, the groups plan pot-luck lunches, study sessions, and other social activities. The clinical Challenges provide example cases of care-providing performance in the American Healthways context, and

invite critical examination of both ideal and non-ideal case examples. The teaching that occurs in these Challenges focuses on evidence-based standards of care, common medications and their effects, and healthy lifestyle modifications for each of the clinical conditions.

At the same time, the new nurses are bonding with their mentoring clinicians during each afternoon's mentoring time. The mentoring relationships are generally very supportive at many levels. Cognitively, the mentors support the learning of the computer system and model the performance of American Healthways nursing, providing care over the phone. Affectively, the mentors encourage the new clinicians to gradually increase their level of performance of the work, provide constructive feedback and bolster their confidence. The mentors also are key interpreters of the experience of performing the nursing work, as they share their own stories of past and present nursing experience and describe the differentiation of roles. Working with the mentors on the language they used to leverage these differentiation opportunities was also included in the intervention of this study.

By the end of the four weeks of Orientation classes, the nurses have demonstrated competence with the clinical content for each of the disease conditions. In mentoring during this time, they have progressed from observation and asking questions to participation, reflection and getting feedback from their mentors. Before the Orientation is considered officially completed, the new clinician works on the mentor's schedule for an additional few days. During this time, the mentors refer to a checklist of performance objectives that the new clinicians need to demonstrate mastery of before they "graduate" to work on their own. The COM and Trainer also continue to monitor the clinicians'

performance and offer help, support, and remediation wherever needed. Once the mentor and COM/Trainer sign off on the checklist, the clinician is considered fully trained and begins to work on her or his own schedule. The group usually celebrates with a small party at the end of the Orientation classes, which may be the last time they will be together as a cohort on the same schedule. Unanimously, though, they express a feeling of bonding as a group with each other and their mentors, and a desire to maintain that bond through planning activities together.

Materials

The aspects of role knowledge identified through observation, conversation and interviews described previously were portrayed through the words and stories of veteran American Healthways clinicians. To create the materials, select clinicians shared their stories exemplifying the seven aspects of role knowledge, capturing the essence of each aspect. These stories were edited and presented as interactive narratives. Interactive narratives embed video, audio and text along with hyperlinks to relevant other materials at points during the narrative. The overall text is non-linear, meaning that the user may listen to the entire narrative, or they may hyperlink to other parts of the text. The new clinicians viewing the interactive narratives had the ability to follow links of their choosing in their process of making meaning from the texts. An index of all of the stories was also available that provided access to any of the stories at the clinician's choosing. Following each viewing of the story themes, the clinicians were given an opportunity to write a reflective response to the material. Clinicians were prompted to imagine

themselves in the place of the experiences told by the clinician in the video, and to write a response to the prompt given (see Appendix A).

Macromedia Flash MX software was used to create a presentation shell for the videos, which were edited and presented digitally. The presentation shell runs in any standard web browser, such as Internet Explorer.

In the materials developed and used in the study, a total of 29 stories were collected, edited and presented. The 29 stories were organized into seven categories corresponding with the seven aspects of the AMHC clinician role. Each of the stories appeared on its own screen in the presentation shell, showed the name of the clinician appearing in the story, and featured text that would appear to bring focus to certain words and phrases. The typical story included in the materials was about a call that the clinician had made to a member. Some of the stories began with the clinician talking about one of the themes (based on the aspects of the role). The veteran clinicians were asked to imagine that they were talking to a new clinician about what the work was like and about what it means to be an American Healthways clinician. Some of the stories were funny and some were touching.

The stories were chosen to reflect the essence of the role of American Healthways clinician. The nature of the intervention is that learning to become an American Healthways clinician is a process of transforming the nurses' professional identity, how they think about what they do and why they do it. That necessitates imagining oneself in a new situation, adopting a new role, and playing out that role. The learning from this activity is a process of discovery and reflection leading to insight about themselves (e.g. Lin, 2001a). The learners imagine themselves in the place and experiences of the role of

the American Healthways clinicians they see and hear, much in the same way one might imagine themselves in the role of a character they see performed on film or the stage, a way that they would not imagine if they were only to read an informative biography of the character. Prompting for reflection on what they have heard and how they place themselves with respect to that vicarious experience can serve as a reifying process for transforming their professional identity. Examples from prior research can be found in Cain (1991; Lave & Wenger, 1991) and Holland et al. (1998). In ethnographic studies of identity change, such as studies of how a person becomes an alcoholic with the community of Alcoholics Anonymous, stories and the explicit prompting to reflect on one's own experience serve two purposes. One, the stories that other members of the community tell provide a conceptual framework for interpreting and re-interpreting one's own experiences. Two, the explicit expectation to interpret and reflect on those experiences and then tell them as a story serves to reify the transformation process for reconceptualizing identity.

Procedures of the Intervention

The intervention in this study attempted to design part of the experience of learning the role of American Healthways clinician. To that end, the instructional design of the New Clinician Orientation was modified to include materials that intentionally modeled and set expectations for the role that the new clinicians were to assume. These materials took the form of stories that veteran members of the community of practice would tell to new clinicians about what it means to be an American Healthways clinician. The experienced members of the community of practice who were directly involved in

training the new clinicians were also participants in the modified design. These participants, who were the Clinical Trainer and mentors for the new clinicians, were asked to be more intentional with the language they used to describe the American Healthways clinician role. They were asked to use the terms describing the differentiating aspects of the role during class and during mentoring sessions in order to make those aspects more salient to the new clinicians. Since the aspects were derived from the daily practice of the role, the intentionality was simply a process of making explicit the assumptions and reasons embedded in their performance. Finally, part of the intervention was to include time for the new clinicians to reflect on their experiences using a set of prompts that guided their reflection.

Before the intervention class began, I met with the mentors assigned to the class and with the Trainer several times. In these meetings I let them know that their part in the intervention of this study was to shape the interpretation of the new clinicians' experiences through language that made explicit the aspects of their new role that were different from their previous roles as nurses. With the Trainer I discussed possible ways that this language might be used to intentionally shape how the new clinicians came to understand their new role and differentiate it from their past roles. The examples that I gave the Trainer included asking questions about how the examples of role performance in the Orientation materials differed from performance in other nursing roles. During the first week of Orientation, the content of the instructional materials asks the nurses to think about the health care system familiar to them, the world of the hospital and doctor's office. There were many opportunities for differentiating the American Healthways model of health care and the role of the nurse at American Healthways from other health

care settings. The Trainer did pose questions to the new clinicians about how the roles would be different, but she also used language to reshape their conception of the role in an unexpected way, through a process of story reinterpretation, described in detail later.

On the fifth day of the Orientation, the other part of this study's intervention came into play. The new clinicians in Orientation observed as a group the first set of clinician role stories developed for this study. The stories feature clinicians telling stories from their experiences performing their role. The nature of these stories range from touching to comical examples of interacting with patients on the phone, and also included in their own words what it meant to be a member of their community of practice. The stories served several purposes. First, they allowed the new clinicians to put names with faces and introduced some of the veteran members of the community. Secondly, they gave the new clinicians a starting point from which to talk to the veteran clinicians. Their personalities came through in the video, and made the veterans more human and approachable. Third, the stories provided illustrative allegories for understanding the different aspects of the role in a narrative way. After viewing the stories, the clinicians did a reflective writing exercise that prompted them to think about their new role. The prompts guided the clinicians to imagine themselves performing the role and generate thoughts about the differentiating aspects of the role.

At three points during the Orientation, the clinicians viewed the stories and did a reflective writing. The viewings and reflections took place on Day 5, Day 10, and Day 16 of the Orientation. The reason for spacing them roughly a week apart each time was to allow the clinicians enough time to accumulate a week's worth of experiences of observing and performing the role during class and mentoring. The stories were not

meant to substitute for experience with the role, but rather to provide a designed way to interpret those experiences and to shape and reinforce the interpretations made by the mentors and Trainer. In the first viewing session, stories from the time, population, and modality themes were shown. The stories from the remaining themes were viewed in the second session, and in the third session stories from all of the themes were reviewed.

CHAPTER IV

RESULTS

In this study, two questions are addressed. Did the intervention result in a difference in how the new clinicians think about their role and how they perform their role? Secondly, what can be learned from this study that might inform design principles for future study of role-based learning? The two questions will be addressed through different sources of data collected in the study. The clinicians' conception of the role was assessed through the reflective writings in response to the prompts, as well as through interviews where they were asked to describe their experiences in the role. Their managers judged their performance of the role through their responses to a case-based assessment and their level of performance on a formal evaluation. These two data tracks are discussed next, and then following is an exploration of the observation data to attempt to trace key events in shaping the participants' understanding of the role.

Analysis of reflective writing data

The reflective writing data provide two comparisons of interest: they allow for a comparison of change over time with each class, and for comparison between the control and intervention classes. The prompts in the reflective writing (see Appendix A) were designed to elicit the clinicians' definition of their professional role in the words that they would use with their peers. These writings were analyzed by experienced members of the community of practice on two dimensions: demonstration of an understanding of the

role, and fit with the accepted norms of practice as American Healthways clinicians. The evidence of knowledge of the role was whether or not the clinician mentioned in appropriate ways the seven aspects of the role in their writings. Clinical Operations Managers (COMs) and the Trainer made the judgment of whether the writing mentioned the role aspect in an appropriate, relevant way. The COMs and Trainer also assigned an Overall rating to each of the writings for the degree to which they thought the new clinician writing them would adopt and perform the role of clinician. The raters assigned a score that equated to Not at all, A little but with a lot to learn, About average, or Very well and likely to succeed and be successful. Each of the reflective writing documents used in the comparisons received a rating for understanding of the role and fit with the role.

The mean rating was calculated for the two groups at the two data points. Table 1 shows the mean ratings for understanding the aspects of the role (Aspect rating) and for fit with the role (Overall rating). The range of score possible for the Aspect rating was 0-14, corresponding to the aspects of the role described earlier in the paper, as demonstrated across two questions. The score for the Overall fit rating was 0-3 as described above. Two-tailed independent samples t-tests were used to assess the degree of statistical significance in the differences between the two groups at time 1 and time 2, and paired two-tailed t-tests were used to assess the change from time 1 to time 2 within each group. Finally, a two-tailed independent samples t-test compared the pre-post difference scores between the two groups. These pairwise tests were chosen in place of an ANOVA because in a two group before and after design, the only statistic of interest is the Interaction, which can be evaluated by the tests used here (Cohen, 1996).

Table 1: Reflective writing data

	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>	Gain score <i>M (SD)</i>
<u>Aspect Rating</u>			
Intervention	2.9 (1.2)	4.7 (1.1)	1.8 (1.2)
Control	3.1 (1.1)	3.4 (0.8)	0.3 (1.2)
	n	n	
<u>Overall Rating</u>			
Intervention	1.4 (0.5)	2.7 (0.4)	1.3 (0.6)
Control	1.1 (0.5)	1.4 (1.0)	0.3 (0.9)
	n	n	

Statistical significance is indicated by a “Y” in the table, while lack of statistical significance is indicated by an “n.” The analyses of the reflective writing data showed a statistically significant difference between the groups on their gain scores, for both the Aspect ratings, $t(16) = -2.43$, $p = .027$, and for the Overall ratings, $t(16) = -2.45$, $p = .026$. There were also statistically significant differences between the groups at Posttest on both ratings, Aspect ratings, $t(16) = -2.82$, $p = .014$, Overall ratings, $t(16) = -3.62$, $p = .005$, and statistically significant differences from Pretest to Posttest within the Intervention group on both ratings, Aspect ratings, $t(8) = -4.44$, $p = .002$, Overall ratings, $t(8) = -6.78$, $p < .001$. The responses the Intervention group gave at Posttest were judged to show significantly more understanding of the role and overall fit with the role. There were no statistically significant differences on either of the ratings between the groups at Pretest, Aspect ratings, $t(16) = 0.21$, $p = .835$, Overall ratings, $t(16) = -1.32$, $p = .206$, or within the Control group from Pretest to Posttest, Aspect ratings, $t(8) = -0.96$, $p = .367$, Overall ratings, $t(8) = -1.26$, $p = .244$. Both groups’ ratings showed improvement from

Pretest to Posttest, presumably as a result of their Orientation experience. The difference between the groups at Posttest, though, suggests that the intervention significantly improved their understanding of the role as demonstrated through their reflective writing. Notable also is that the difference was significant for both the Aspect and Overall ratings. The direct relationship of the two ratings shows that clinicians given higher ratings of understanding of the aspects of the role were also rated as demonstrating a better overall fit with the role.

Analysis of case-based assessment data

The case assessment presented seven scenarios to the clinicians and asked them to respond to a question for each one. The intent of this assessment was to capture the clinicians' conception of role performance in an idealized way, that is, without the pressure of actually having to perform the role, do the clinicians have the role knowledge needed to generate what ideal performance would look like? The case assessments were also rated blindly by the Trainer and COMs on a scale of 1-10 that was based on the criteria used for rating the Colleague Development Process observations.

Table 2: Case-Based Writing Assessment data

	Case-based assessment score <i>M (SD)</i>
Intervention class	3.8 (1.4)
Control class	4.5 (1.1)

A two-tailed t-test was used to analyze the difference in the mean scores between groups. No significant difference emerged between the mean scores of the groups, $t(16) = 1.26, p = .23$.

Analysis of CDP data

The third quantitative analysis of the measures used in the study was a measure of the clinicians' actual performance in the role, as evaluated by their Colleague Development Process evaluation forms. In this study, the CDP observations done one month following the clinicians' "graduation" from Orientation were used for comparison of the groups. The hypothesis was that addressing the aspects of role knowledge should result in fewer of the common errors observed in newly graduated clinicians. To this end, the CDP forms of the new clinicians were collected and intermixed with a set of CDP forms of clinicians who had been on the job for greater than one year. COMs other than the ones who had actually completed the forms then performed a dichotomous sort of the forms into two stacks, one stack of forms that they believe belonged to the veteran clinicians, and the other stack that they believed belonged to new clinicians. The hypothesis of this analysis was that a greater proportion of the CDP forms of the new clinicians in the intervention group would end up in the veteran stack than the forms of the new clinicians from the control group.

Table 3: CDP data contingency table

	Rated as New	Rated as Veteran
Intervention class	2.5	4.5
Control class	2.5	4.5

Two Clinical Operations Managers located at different sites from the sites used in the study performed the sorting task to analyze the participants' CDP forms. When the sort totals were averaged together, they resulted in identical numbers of forms going into each category. The chi-square test for this contingency table would result in a test statistic of 0, since the data are identical across conditions.

Comparison of post-Orientation interview data

In interviews following the Orientation conducted with both classes of clinicians, some striking differences emerged in how they talked about the work and their roles as nurses and American Healthways clinicians. During these interviews, I asked them questions along two themes. First were questions that asked about how the performance of the role matched or did not match their expectations, based on their Orientation experiences. Second were questions that asked them to "tell their story" of how they have come to their current conception of their role and their work. In the following discussion of the interview data, the new clinicians from the intervention class will be referred to as the Role clinicians and the new clinicians from the control class will be referred to as the Control clinicians.

Overall, I would characterize the thoughts and feelings expressed in the interviews with the Role clinicians as pleased with the nature of their work, highly

positive regarding their peers and mentors, and surprised by the degree of autonomy afforded them in the performance of their work. By contrast, the thoughts and feelings expressed by the Control clinicians were more mixed regarding the nature of the work and their role. About half of the Control clinicians reported feeling unpleasantly surprised by some of the aspects of performance and did not feel like they were able to reconcile those aspects of the role of American Healthways clinician with their conception of themselves as nurses. None of the Role clinicians reported feeling this conflict of roles. The post-Orientation interview data are discussed further in Chapters 5 and 6.

CHAPTER V

DISCUSSION OF THE INTERVENTION

When the clinicians in the Intervention class were asked about how they learned their new role, what allowed them to feel comfortable and competent in it, most of them simply said that it took “time” and “experience.” The following section is an attempt to examine the time and experience of Orientation in a finer-grained way. The intervention of the role-based design used stories and intentional language to design the learning of role knowledge. Three strands of discussion are woven in this section to discuss the effects of the role-based design. The first strand follows the stories and the intentionality of language used by the mentors and the Trainer during the Orientation and mentoring experiences that created and negotiated meaning with the new clinicians. The second strand follows the cycles of participation and reflection that led to forming interpretations and reinterpretations of experiences. The third strand focuses on how the clinicians formed beliefs and attitudes about the role and the work and how the processes of learning and doing led to the act of becoming identified with a role. Along each of these strands, observed experiences and interview data will be used to attempt to trace meaningful events in order to understand what led to shifts in understanding.

Negotiating meaning of experiences

Intentionality of language

In the designed, role-based intervention in this study, language was used in an intentional way to frame the experiences of the participants in ways consistent with the community's understanding of the role. As newcomers enter the community of practice, they experience an uncertainty about their role and their performance in that role. As they begin to interact with others in the community of practice, as they observe and participate in practice, and as they reflect on those experiences, they develop interpretations through the lenses of their prior experiences and from the perspective of their prior roles. The meaning that is assigned to the new experiences is influenced by their prior interpretive frames of reference to a greater or lesser degree. The purpose of the designed intervention is to minimize the influence of the participants' prior role knowledge and to facilitate the adoption of interpretations consistent with the new role knowledge. Language that communicates the role knowledge of the role affords the new clinicians with ways of interpreting experiences that create the same meaning of events that the veteran members of the community of practice form and hold.

The language intervention in the role-based design was intended to make explicit the role knowledge of the clinician role. The mentors and the Trainer agreed to be mindful of using language that made explicit the aspects of the AMHC clinician role described by this study. The Trainer made reference, albeit inconsistently at times, throughout the Orientation classes to the role aspects in relation to the content of the learning materials. Many of the mentors expressed that it would be easy to talk about

what they already do, just in a more explicit way than they might normally talk about it without thinking about it. During the mentoring sessions observed for the study, the mentors took opportunities to guide the new clinicians' interpretations of events through using the role aspect language to frame those events and offer a meaning to them. The evidence that the new clinicians incorporated these interpretations as they constructed their own meaning of the events is in the reflective writing and interview data, which demonstrated that the Role class formed a conception of the role that is highly consistent with the designed role knowledge.

From the first day of the Role-based Orientation classes, the Trainer focused on using language to highlight and make explicit the aspects of the role as they were talked about in class discussion. The focus on the role knowledge of being an American Healthways clinician was more explicit in the beginning few days of the Orientation classes, and tended to wane the remainder of the Orientation as the focus of the instructional materials shifted to clinical content. The instructional materials themselves focus on contrasting the American Healthways model of care with other healthcare settings, and to a lesser extent, what part the nurses play in that model of care at American Healthways. So, the fact that the explicit focus on role was seen more at the beginning of Orientation than at the end can be somewhat explained by the design of the Orientation. However, an interesting comparison emerges between the Role-based class and the Control class. Both classes used the same set of instructional materials for Orientation, and both classes featured discussion about the role in the beginning few days of classes. However, in the Role-based class, the Trainer made explicit all seven aspects of the role in each of the first two days of class, many of them in multiple instances. In

the Control class, some of the aspects were implicitly present in the discussion, but only four emerged during the first day, and only three in the second day. Furthermore, the Trainer in the Role class took the opportunities in the discussion to elaborate on aspects as they came up, providing a richer explanation of each one, whereas in the Control class the discussion did not linger on these aspects.

Examples of specific uses of language to interpret experiences were documented as a “manipulation check” during the observations. The Trainer made the role aspects explicit in class discussion in several ways. For example, she intentionally brought up examples of practice that illustrated one or more of the aspects, such as, to illustrate the “setting” aspect, telling a story about how the registered dietitians who work with the nurses will use the opportunities of the members’ home setting to educate or intervene, such as asking the member to go to the pantry to read or compare food labels. In her responses to some questions, the Trainer would intentionally provide an interpretation of the issue or experience that was consistent with the aspects of the role. For example, in one interaction, J. J. (one of the new clinicians in the Intervention class) talked about how surprised she was that members would answer questions and speak openly about feeling sad or depressed. The Trainer responded by talking about the relative anonymity, comfort and safety of talking to a medical professional over the phone in their own home instead of face to face in a doctor’s office, reflecting the changes in the modality and setting aspects of the American Healthways clinician role.

The Trainer also provided phrases to the class that summarized a topic of discussion in a way that frames it consistently with the idea of the role she wants to communicate. For example, during Day 1 of Orientation, the instructional materials

present a scenario posing the challenge of coming up with a model of healthcare that is proactive, rather than reactive. In leading the group discussion of the questions associated with this challenge, the Trainer made explicit the differences in the nature of treatment between hospital and American Healthways models of care by writing such phrases as “closing the gaps in health care” and “support/bridge between patient and MD” on the notepad at the front of the class. These phrases have the power to become the heuristics that guide interpretation for the new clinicians’ practice. The phrases have that power to the extent that the phrases are used throughout the community as explanations for what they do, and in fact the phrases are used quite commonly to summarize practice in the role. Finally, the Trainer asked questions of the group that guided them to make an aspect of the role explicit themselves, such as when she asked the group how patients sometimes felt intimidated speaking face to face with a doctor, and how they might feel differently with what “we” do? The Trainer consistently used the word “we” to refer to American Healthways clinicians, and the question clearly guided the nurses to say that members may feel more comfortable talking to a medical professional over the phone than they do face to face, highlighting the modality aspect. These strategies, of bringing up examples to talk about, of intentionally selecting phrases to summarize topics of discussion, and of asking guided questions, resulted in the Trainer creating opportunities and leveraging opportunities to make explicit the differentiating aspects of the AMHC role.

Stories and interpretations of experiences

The stories that were captured and presented as part of the role-based design served several purposes, one of which will be discussed here in tandem with a discussion of mentoring, story-telling, and interpretation by veteran members of a community of practice. In viewing the stories presented as part of the Intervention, and in having mentoring experiences and conversations with veteran members of the community, the new clinicians heard stories told that presented certain events from the teller's point of view. Inherent in the conversations and told stories is the teller's interpretation of the events; the event has meaning attached to it in the teller's mind, and that meaning is communicated through verbal and affective cues such as choosing positive or negative words, tone of voice, enthusiasm, and facial expression. In a strictly constructivist sense, the meaning of the story is constructed in the mind of the listener using the listener's frame of reference, prior experiences, and perception of the teller. The verbal and affective components of the story, though, can be the raw materials from which the listener constructs meaning and reframes past experiences through reinterpretation using the new information. For example, certain phrases can take on explanatory power for why certain activities are appropriate or valued.

The stories used in the intervention were veteran members of the community of practice telling about events that they had experienced in their performance of their role in that community. Most of the stories presented a narrative about a particular call or speaking with a particular member, events that exemplify the practice of the role. The affect of the stories ranged from humorous to touching, and many of the nurses telling the stories used the stories to highlight the reasons for practicing a certain way in the role.

Furthermore, the nurses usually also indicated that their work as AMHC clinicians is preferable to, sometimes more effective than, their work as nurses in other settings, especially the hospital. The clinicians telling the story are describing an event and proposing an interpretation of the event, their interpretation. The meaning that is constructed in the listeners' minds is a process of negotiating that received interpretation with their own beliefs and frame of reference on imagining the event based on their prior experiences. This process of negotiating meaning for the interpretation of events occurs in the stories they viewed, as well as in conversation with others, and in the mentoring sessions they participated in each day.

The veteran members of the community of practice used both stories and intentional language to engage in the negotiation of meaning of experiences. During the daily mentoring sessions, the mentors told stories as the conversation or work events led them to bring up the story; in other words, stories are told casually and spontaneously by the mentors. In performing the work, the mentors also create a narrative of the mentoring experience. The mentors attribute meaning to the experiences and propose these interpretations through their interaction with the new clinician. These occurrences are direct interpretations of the events that the dyad experiences together, and the intentionality of the language the mentors used is similar to that described previously for the Trainer. Another type of event that also involved negotiation of meaning, though, was the reinterpretation of the new clinicians' stories. These interactions involve the new clinician telling a story from the past that relates to her or his prior nursing experiences. These stories are then reinterpreted by the veteran members of the community in ways congruent with their role knowledge or performance.

For example, in the following interchange, the mentor (Mentor M.) with L. S. negotiates a reinterpretation of L. S.'s past experience in ways congruent with her new role at American Healthways.

L. S.: Now one thing that I feel like I'll be comfortable with, because of working in the doctor's office,

Mentor M.: Mm-hmm.

L. S.: my biggest thing was, they would come in and they wouldn't know their meds. [sighs] you know. And I would take the time, when I could, and call the pharmacy, if they went to one pharmacist, and get a complete list, if I got their information, for their pharmacist. But that was my big teaching point, you need to bring in the bag of meds, if you don't want to write them down. Or make a list for me. And not only for me, but for everybody. So can I set that, goal, because that's my big thing?

Mentor M.: What you can do is, ask them first if they **have** a list. And if they don't, if someone helps them with their medicines they can do it, or the person themselves. And I do this a lot, especially with heart people [people with heart disease], I'll tell them, or if it's the wife, I'll tell them, [begins talking in higher-pitched voice to indicate this is what she would say to the member] 'you know what, it's really your safety measure, because you're taking all these medicines for your heart and blood pressure, and Heaven forbid you should ever have any trouble, but here's what I would do. I would make yourself a list of everything you take, how much, and how often,'

L. S.: and what time of day

Mentor M.: [voice returns to normal pitch] make sure you get the dosages. [voice raises again] And then what I would do is write it on a little index card, and you know what else I'd put on there? I'd put your doctor's name, regular doctor like your PCP, and maybe even your cardiac doctor's name, [voice normal] you know, their specialists, [voice raises] and, an emergency telephone number, you know, person to contact, because. And then what I would do is I'd slip that little index card in my wallet, [voice normal] if it's a guy, or keep that in a purse. [voice raises] And make sure you give your wife a copy, or have one at your house because that is very helpful for people if you were to have to go to the ER, that you have all that written down there. Now, you do have to keep it updated. [voice returns to normal] You know, try to... So that's a wonderful goal, and a good safety mechanism too.

L. S.: Right, that's kind of, one that will probably, that's very comfort level for me because, you know, that's a big thing with me, so that'll be one thing that I'll probably work on.

[Tape 12]

This interchange is an example of one of the new clinicians telling her mentor about a type of experience in her previous nursing role in a doctor's office. Instead of

accepting the experience at face value, the mentor proposes a change in her frame of reference for that type of experience. In her prior work, making sure that her patients made and kept lists of their current medications was “a big thing” for L. S. because they would come into her doctor’s office and not be able to recall all of their medications. The frame of reference for L. S. was that med lists were important because the doctor she worked for needed to know the patients’ medications.¹ In Mentor M.’s frame of reference, that of an American Healthways clinician, the meaning of the experience is different. For Mentor M., the medication list is one component of a “safety measure” for the member. Mentor M. wants the member to be prepared with a tool to coordinate care in both his or her routine and any emergency healthcare. The index card she proposes has current medications, a list of the member’s doctors, and emergency contact information, and is something the member can carry with her or him and keep a copy of at home. The experience of working with a patient to create a med list serves different purposes depending on the nurse’s role, and this mentoring interchange represents a negotiated shift in meaning of that experience. Mentor M. takes the story that L. S. tells and reinterprets it in ways consistent with the AMHC role.

Two aspects of the role are salient in the interchange between Mentor M. and L. S. The first is that the nature of treatment as an American Healthways clinician is different than in other nursing roles. The AMHC model for providing care is based on education, prevention, and wellness. In her role at the doctor’s office, L. S. worked in a model of care that focused on addressing the chief complaints of the patients who visited

¹ It is common for patients with chronic conditions to see multiple doctors and specialists, and coordinating care across these providers is a challenge for the healthcare system. Often, patients will be prescribed the same medication twice or two drugs in the same class of medications because of the lack of coordination across providers and the lack of patients’ own education about medications for their conditions.

the doctor. Mentor M.'s reinterpretation of the experience of making a med list with a member highlights the differences between L. S.'s prior role and the AMHC model. Mentor M's frame of reference is that the experience means fostering awareness and information sharing among the member's treating providers, preventing possible problems such as dosing errors, prescription duplications or interactions, and making sure that in case of an emergency the member's emergency care providers are well-informed. Thus, the index card tool that Mentor M. describes to L. S. is a representation of the nature of treatment provided as an American Healthways clinician. The experience of making the med list is reinterpreted to be consistent with the aspect of the role that it represents.

The second way that Mentor M. more implicitly highlights the difference in the two experiences is through her use of wording and voice pitch to convey that she is speaking on the phone to the member, and that since the clinicians only have their voice and their words (and not sight or touch) to communicate to the member, the choice of what to say and how to say it takes on more importance. In the interaction quoted above, Mentor M. uses the pitch of her voice to differentiate between what she would say to the member on the phone and what she is saying directly to L. S., a fellow nurse. When she is using the voice with which she would speak to the member, she uses the personal pronouns "I" and "you" and chooses words and phrases that are easy to understand. At times during her narration, she drops her voice pitch back to normal to explain to the other nurse the choices she is making, for example saying "cardiac doctor" instead of specialist, or to insert instruction, such as "make sure you get the dosages." Implicit also in Mentor M.'s response is that the strategies L. S. says that she used in the doctor's

office will no longer work in her new role. Because the interaction takes place over the phone, she cannot ask the patient to bring in a bag of pills or pill bottles to make the list herself.

Mentor M.'s reinterpretation of the med list experience addresses the differences relevant to the aspects of the role, but there is also a reinterpretation at the affective level that reflects differences in the roles. When L. S. talks about the patients who would visit her doctor's office, her tone is exasperated and her language suggests that she got tired of patients' lack of knowledge. For example, she says that her "biggest thing" was when patients would "come in and they wouldn't know their meds." She then sighs and looks at her Mentor and says, "you know." Her language is also very directive in reference to the patient, with phrases such as "you need to" and "make a list." In her role in the doctor's office, L. S. viewed a patient's lack of knowledge as a lack of preparedness and an obstacle, a hindrance to the work that she and the doctor needed to accomplish in the limited time of that visit. Her goal in making the med list was to prepare the patient to make better use of her and the doctor's time. By contrast, Mentor M.'s tone when she is emulating the way she would talk to the member conveys patience and her language suggests collaboration. In her role as an American Healthways clinician, Mentor M. views the member's lack of knowledge as an educational opportunity to help the member take ownership of her or his health care. The focus is on the member/patient, not on any particular provider or appointment time, so she can take the time to speak more slowly and use phrases that suggest ideas to the member, such as when Mentor M. says "Here's what I would do," or "you know what else I'd put on there?" The shift in the affective

meaning of the experience that L. S. and Mentor M. talk about represents an intentional reinterpretation of that experience to be more consistent with the clinician role.

Throughout the Orientation I observed several such instances of reinterpretation guided by the aspects made explicit in the role-based design. For example, on Day 7 of the classes, the class was practicing writing documentation in the computer system as they listened to a mock care call. K. B., one of the new clinicians, said that she was having trouble remembering to document different notes about the various dimensions of care for the member in different places in the system, such as documenting notes about Diabetes medications in the Diabetes medications module. K. B. said that she was still thinking in terms of “old nursing,” referring to her years of nursing in the hospital, where the norm was charting in long narrative notes in one location. The Trainer acknowledged that using the company’s computer-based system represented a change in technology for K. B. and that it may take a little time to get used to it. The Trainer also went on to explain that the reason for charting that way in the system had to do with their approach to managing populations of chronically ill people. Documenting the clinician’s progress with the member on specific things means that whichever clinician makes the next call to that member would have that information. The Trainer reinterpreted K. B.’s experience to not mean a struggle of “old nursing” versus new, but rather as learning aspects of the clinician role, specifically the population and technology aspects, that differentiate it from other nursing roles.

Another example of reinterpretation occurred on Day 3 between J. J. and the Trainer. J. J. had served for many years as a parish nurse for her church, providing home-based care, advice, and occasional wellness programs for her parishioners. In a

discussion of behavior change, J. J. told a story about starting an exercise and diet educational program with her parishioners, but that it was difficult to get them to buy in to the program because it took time for them to see results from it. The Trainer responded by likening that experience to the clinicians' process of engaging members in the program, and convincing them to set small, achievable goals as a first step to get them to make behavior change over time. Her reinterpretation of the story proposes a shift from thinking about her parish nursing program, to thinking about engaging members as an American Healthways clinician as being like working with that group from her parish. The Trainer turns the focus to the nature of treatment aspect of the clinician role. The story takes on explanatory power for how to think about that aspect of practice in her new role, as opposed to simply being an anecdote from her past nursing experience. In other words, the focus of the story had been on that past experience as an example of behavior change. In its new meaning, the focus is on an aspect of practice in her new role, and the story provides a way of guiding her thinking about the practice in her new role.

Several other examples of reinterpretation were observed during the Orientation, and in each case the Trainer reframed a comment or story told by one of the new clinicians to propose a meaning for it consistent with the aspects of their new role.

Evidence of negotiated meaning in the post-Orientation interviews

The clinicians' conception of themselves as nurses and in the role of American Healthways clinicians showed marked differences between the Intervention group and the Control group by the end of Orientation. Their articulations of their role and the work they perform reveal what the nurses in each of the groups learned about their role and the

work from the stories and language used by the veteran members of the community that they interacted with. Although the groups displayed similarities regarding many aspects of the work, for instance their enjoyment of delivering care calls to the members, there were some aspects of the work that revealed the differences, most saliently around the “welcome calls” made to members. Three themes emerged that showed differences in conception of the role and the work between the two groups.

The first theme that emerged from the interviews was around the conception of self as nurse and self as American Healthways clinician. In the following excerpt from one of the Role clinician interviews, T. M. talks about the perception of other nurses toward the AMHC role and about reconciling her experience with her new role.

T. M.: “And, I really do feel like a nurse, I don’t know. Coming from my last job, you know they’re like, [changes her voice to indicate another speaking] ‘you’re going to be talking on the phone, you’re going to lose your skills,’ [her own voice returns] and all this stuff, and I’m thinking, oh, **how much** I’ve learned here...”

The perception expressed by her former peers was that the AMHC role did not require nursing skills and the implication is that T. M. would no longer be ‘doing nursing’ as they define ‘nursing.’ The conception of nursing as being something that can happen over the phone without execution of technical skills (e.g. starting an IV or pic line) is foreign to T. M.’s nursing colleagues in her former setting. By contrast, now, T. M.’s statement that “I really do feel like a nurse” has the feel of an assertion to her former nursing colleagues that her conception of nursing has changed to include performance as an American Healthways clinician. She also asserts that she has learned “so much,” really emphasizing those words in a way that implies she has learned more in learning her role as an AMHC clinician than she did in her former nursing settings.

By contrast, from the Control clinician interviews, K. H. states that there is one big aspect of the work that has taken her by surprise, and that is what she calls the “soft selling” skills that she sees as a big part of the job. The situations that K. H. is referring to are the welcome calls to new members of an AMHC program. Sometimes, the call is a ‘cold call’ because the letter and information packet have not yet reached the member, or the member did not read them. The challenge for the nurse is to establish credentials and inform the member about the program. K. H. describes the process as “soft selling” because the nurse has to sell the idea of participating in the program to the member², a concept that is new to many nurses. In most other healthcare settings where the nurses have experience, patients do not have to be convinced to participate in treatment; instead, the patients usually seek out the medical professionals. The shift in the setting of care, the delivery modality of care, and the population care is provided to are the aspects that address this contrast.

K. H.: “The selling aspect of the job, I don’t like that, and when I found out about that I had a problem with it, and I still don’t like that. I wasn’t expecting to have to sell a product as a registered nurse. And, that’s really the only problem I have.”

Interviewer: “By sell a product, you mean engaging members on welcome calls?”

K. H.: “Exactly, I mean selling the program.”

Interviewer: “Yeah, soft-sell, I think you mentioned in your writing.”

K. H.: “Right. That’s the only thing that I wasn’t expecting that has happened. And I don’t like it.”

...

Interviewer: “K. H., you said something interesting, you said as a registered nurse you didn’t expect to have to be selling a product?”

K. H.: “Right, I feel like a telemarketer sometimes with a Bachelor’s degree. [laughter] Well, I’m being honest!”

² The nurses do not financially sell the program to the member. The corporation sells the disease management program to a health insurance plan, who then offers the program to its eligible members at no additional cost.

Later in the interview, K. H. says that she absolutely loves doing the care calls to the members, where the member already has been introduced to the program and the nurse is making a scheduled call to offer care. The welcome calls, though, are a task that requires her to perform in a way that she perceives as being outside the role of a registered nurse. Her use of the phrase “registered nurse” indicates that that is the name she is giving to her professional role, and she says that some aspects of performance in her work make her feel not like a nurse but a telemarketer. K. H. is positioning her professional identity as being situated relative to two roles that she perceives as different, that of the role of professional nurse, and the role of American Healthways clinician. This dichotomy was not in evidence in any of the Role clinician post-Orientation interviews, but was echoed by five out of the nine of the Control clinicians. Given the nature of the question, which was along the lines of, “Now that you’ve been working for a week, has the job matched your expectations?” the difference in the two groups’ responses seems to indicate that the Role clinicians’ conception of their role and its performance was formed more consistently with their actual experience of the work than that of the Control clinicians’.

The second theme that emerged from these interviews was a difference in how the clinicians described their work with members in this role in contrast to their work with patients in prior nursing roles. Eight of the nine clinicians in the Intervention group compared their work in their new role favorably to their work in previous nursing roles, which they described unfavorably. The next two contrasting statements provide more evidence for the underlying conceptions of the role differing between the two groups. In

her interview, S. W. positions herself as a more “humanistic” nurse now in the AMHC setting than she and her peers were in other settings.

S. W.: “There’s always been a lot of frustration. I’ve come from a critical care background, so I have always been in, you know, everything is intense, rushed, everything is very, ‘that moment’... You really don’t have the opportunity to, for lack of a better word, just deal with them in their human condition, as a human being, and to know them not as, like an MI, but as a father, and a husband, a member of a family, and having the same concerns and cares and problems that we have. So I think, in a lot of different ways we touch people’s lives. And that’s important to me, and that’s been missing for a lot of years. And I’m at the point now in my career where I’m ready to do that. I’m ready to let the 20 year olds have all the glory, and watch ER, you know, and I’ll deal with the human beings.”

Several of the phrases that S. W. uses in her response show that she has integrated her practice as an AMHC clinician with her conception of her identity as a professional nurse. She offers her perception of past nursing settings as rushed and somewhat impersonal because of the intense clinical focus of critical care, where nurses don’t have the time or opportunity to know their patients as anything other than “an MI.” It is only now in her new role as an AMHC clinician that “we touch people’s lives” in ways that connect across those people’s “human condition.” Her use of the pronoun “we” also indicates that she has fully identified herself as a nurse with her new role as a clinician in the AMHC community of practice.

S. W. positions her identity in contrast to “the 20 year olds” who would work in critical care. Even though she uses the word “glory” to describe the critical care work in the hospital, and also associates it with a TV show, “ER,” with its connotation of fame, her suggestion is that she has matured beyond the need for fame and glory. Her use of this language is also somewhat sarcastic, since critical care nurses most often are not famous or glorified. Her statement may also reveal, though, that she believes that most nurses, perhaps most people, when they think about nursing, picture the fast-paced setting

of the ER and hospital. Her somewhat sarcastic statement, then, may also be slightly defensive of her assertion that she is in fact doing nursing in her new role as an AMHC clinician.

By contrast to S. W.'s response in the post-Orientation interview, L. C. explicitly states that she does not think that she is doing nursing. In fact, her response to the question reveals several important inconsistencies between how she thinks about herself as a nurse and about herself in the role of AMHC clinician.

L. C.: "It just, it is selling to me, and most nurses don't have a business background to do that, as well as, I think you've got to be, some kind of a coach, and a motivator, you know you're Anthony Robbins, take your training as a life coach to, motivate people, because, how do we really know, I mean, we can, I can pull somebody off the street and come in here and go through all this scripting and, give them a little overview, and tell them what to do to tell these members... I guess, it just kind of, you know, I don't know, what am I doing? You know what I mean? I mean, I understand the concept of disease management, but, I guess I'm an old nurse, and I'm used to being at the bedside, and I feel more comfortable when I can be face to face with somebody, and sit down with them and really see where they're at, you know what I mean? In a physical sense, before I start hammering them with, you need to do this, this, this and that?"

Interviewer: "Right, I understand what you're saying." [Sneeze]

L. C.: "And welcome calls, no, you don't, I don't think you need a nurse to do the welcome call, I mean..."

Interviewer: "Do you see that part of what you do as, doing nursing, or do you see that as an additional component of, this job?"

L. C.: "I don't think it's nursing, I don't think welcome calls are nursing."

L. C. describes some of her frustration as a result of the mismatch of her expectations with the reality of her role and her work. Her frustration culminates in her asking, in a stammering way, "I guess, it just kind of, you know, I don't know, what am I doing?" This expression of frustration about her role points to a lack of role knowledge about how to define her professional identity and how to perform in her new role. Her statement that she is an "old nurse" has many implications for how she is conceptualizing her identity, her role, and her prior nursing experiences. She is stating that she is "used to

being at the bedside” and more “comfortable” being physically present with the patient. The change in the modality of care as an AMHC clinician is not something that L. C. has incorporated into her definition of nursing. She positions herself in opposition to the AMHC role, justifying her opposition through the language she uses to describe the performance of the role, as “hammering,” and through her description of “bedside” nursing as “face to face” and being able to “sit with them and really see where they’re at.” The contrast in her description conveys the feeling that “bedside” nursing is warmer and values human connection, and that the AMHC role is colder, less personal and less compassionate. She also devalues the AMHC role earlier in her response when she equates its performance to Tony Robbins-style motivational speaking and says that she “could pull somebody off the street” and teach them to perform the work. Her statement later explicitly stating that she doesn’t think that parts of the work require a nurse or are “nursing” in her definition provides more evidence for her opposition to the role. Her conception of the AMHC role is incongruent with her conception of herself as a nurse, and her perceptions lead her to value her current identity over the AMHC clinician role.

The distinction made by the Control clinicians between their conception of themselves as registered nurses and as AMHC clinicians indicates a lack of adoption of the clinician role as it is defined by the community of practice. In this study, the Intervention was designed to influence new clinicians’ conception of the role and facilitate its adoption. The designed Intervention did not set out to change the new clinicians’ identities per se. As described in Chapter 2, identity is made up of a complex, overlapping set of associations of belonging and non-belonging, of which a professional role is one component. While the new clinicians’ adoption or non-adoption of the

AMHC clinician role informs their identities, the focus of the design was on role change, and not explicitly identity change. However, identity change can be inferred by the degree of integration or segregation of the professional role with the person's identity. What the interview data discussed in this section showed is that the Intervention clinicians had integrated their role into their conception of themselves as nurses, while the Control clinicians showed more reticence to adopt the role, tending to differentiate between their AMHC role and themselves as nurses. As stated earlier, this reticence among the Control clinicians was observed in regard to only some aspects of the role and the work, but nevertheless it was not observed in the Intervention class with regard to those same aspects.

Finally, some facts about the clinicians' responses to the question of "What has surprised you about the work?" are illuminating of the differences in the nature and quality of the nurses' conception of their new role as AMHC clinicians. In the Control class interviews, six out of the nine clinicians said that the work was not what they had expected. Five of the Control clinicians said that they felt like parts of the role and the work were not nursing. In contrast, of the four Intervention clinicians who said that they were surprised by some aspect of the work, they cited the high degrees of autonomy and connectivity that they had in the work, both positive things. In talking about their new role as AMHC clinicians, none of the Intervention clinicians described themselves in dichotomous terms, differentiating their identity as a registered nurse from their role as an AMHC clinician. The language they used suggested an integrated conception of the role, i.e. doing nursing in a different way as an AMHC clinician. These differences between the groups suggest that the intervention had the effect of setting expectations for the role

that matched the performance of the role. More than that, though, the work between the two sites cannot be assumed to be different; what the intervention had the effect of influencing, then, was their interpretation of the work, the stories they constructed about their experiences.

Cycles of participation and reification

Participation and reification as a mechanism of role change

In this section the reflective writing data and interviews are discussed with respect to how they support cycles of participation and reification (Wenger, 1998). Wenger (1998, p. 55) characterizes participation as “a process of taking part and also... the relations with others that reflect this process. It suggests both action and connection.” The new clinicians participate in the community of practice through engaging with their mentors in the practice of the role. The complement of participation in the process of negotiating meaning is reification. Wenger (1998, p. 58) defines reification as “the process of giving form to our experience by producing objects that congeal this experience into ‘thingness.’ In so doing we create points of focus around which the negotiation of meaning becomes organized.” Reifying ideas and beliefs happens all the time in response to participation in the world. The process of taking a concept or experience and making it a ‘real’ artifact, such as writing an essay, drafting an image, or creating a spreadsheet, makes the concept concrete and provides a way for you and others to reflect on it.

When a lived experience is recounted at a later time as a story, the told story becomes an artifact, and the telling of it becomes its own experience, hence the expression that stories take on a life of their own. When the story is told, parts of the story can be omitted or embellished, and events may be distorted because the teller's point of view and interpretation of the events are intrinsic in the told story. In other words, once the experience is encoded as that story and told to others, the story reifies that experience and imbues it with meaning as it was understood by the teller. The story, once the teller puts it out there in the world, makes more real or concrete the way the person thinks about the experience and can actually be used to affirm or justify beliefs in the person's interpretation of not only that experience but future experiences as well. As a somewhat timely example, the phenomenon of political "spin" attempts to influence perception of an event, such as a Presidential debate. Viewers participate through watching the debate, and then immediately following the debate, commentators from both sides of the debate attempt to reify the experience in the way that is consistent with their own interpretation and point of view, e.g., each side says that their guy won the debate hands-down, and that the other guy looked foolish and incompetent. Depending on viewers' dispositions, they may choose to believe one of the stories, and the story influences their reality going forward, as they say to their friends, "So-and-so won that debate, I'm going to vote for him."

Participation and reification are a tightly woven tandem such that identifying a given lived moment as either one is of questionable value. Nevertheless, there are periods of time and experiences where a cycle of participation and reification can be bounded as an approximately discrete unit, and the Intervention in this study attempted to design an

experience within one such cycle. Given that reification of participatory experiences does and will inevitably happen, part of the Intervention was to provide designed opportunities for reification through explicit reflection on experience.

“What did you do in mentoring today?”

Beginning on the second day of Orientation, new clinicians participate in a two to two and a half hours long mentoring session each afternoon for the remainder of their Orientation. During these mentoring sessions, the new clinicians move gradually from observing their mentors’ practice to taking on various aspects of the practice themselves. Throughout, the pair form bonds of friendship, and a great deal of informal teaching and learning occurs regarding the practice of work as an American Healthways clinician. After mentoring, the new clinicians come back to class for a debriefing and about an hour more of instructional or computer time. The return of the group together after mentoring is a natural time for reflection, and provides an opportunity to bound a discrete cycle of participation and reification. The participatory experience is itself a thoughtful, meaning making process, but the reflective time provides an opportunity to connect meaning across episodes and from person to person as the group reflects together.

The Trainer usually asks a question such as, “what did you do in mentoring today?” and each of the clinicians in the class briefly describes what went on. The responses are narrative in nature; for example, the typical response would describe a call to a member that stood out for some reason, or something particularly interesting that their mentor did or taught them. Typically, the content of the stories builds on more and more assumptions over time; during the first day or two of mentoring, the clinicians

might report back about mundane activities such as pointing and clicking on various parts of the computer system, or logging into the Dialer. As their practice becomes more sophisticated, these details are taken for granted and the conversations on the phone move to the foreground.

As part of the designed Intervention, two tools were developed and used to leverage the opportunity for reification that this time presented. Each was designed to create an opportunity for reflection that was guided by the aspects of the clinician role. The first was a form with prompts based on the aspects of the role that asked the clinicians to categorize their description of events that happened in mentoring that day. The clinicians write down the key events that they would tell about their mentoring experience, but the events have to go under one of the prompts, such as “Providing care over the phone.” By making salient the aspects of the role and prompting the clinicians to categorize their experiences according to those aspects, the form guides reification of those events in a way that influences or adds to the meaning of the experiences. The events become reified in the form of reflective writing in addition to their reification as told stories, and both events serve to create the meaning of the experiences they represent not only for the listeners but also for the clinician herself. When combined with the intentional language part of the Intervention, the reification process reinforces the mentor’s interpretations of the mentoring experience.

As an example, on the day that L. S. and Mentor M. discussed medication lists and goal-setting with members (see previous section), L. S. came back to class following the mentoring session and reported parts of that story in debriefing. Following

debriefing, I asked L. S. to engage in a brief interview with me where I asked her to elaborate on the differences between “doing” med lists here and in her past nursing roles.

L. S.: “Well, in the doctor’s office, they would come in, and of course we always reviewed their med list. And a lot of times, they just, they couldn’t tell me, what they were on, let alone what it was for. A lot of time it would be, the little white pill, or I’m on that pink pill. And, the doctors, I mean, they have to know, I mean it’s just imperative that they know, so that, you know, their treatment. And, so I would always take time in the doctor’s office, to explain that to the patient. For you to get your best care and be in your best health, you need a list... Now here, I mean, that’s just, I guess every nurse has their thing. That’s my thing. And to me, that’s my comfort zone, that’s something that I always did in the office, and I know it’s important. And it’s going to be very important for our patients, for them to do it. So that’s an easy goal for me to do with the patients, and I’ll talk to them about it, I will tell them the same things and kind of have that conversation. Interviewer: I was going to ask, if anything about how you would go about that would be different.

L. S.: I might ask them, a lot of them, I’ll give them ideas. Some of them carried them, you know they didn’t want to take the time to write them down. That’s fine. Get a Wal-mart plastic bag, put all your bottles in there, take it in to the doctor with you. That’s okay... Since I’ve been here, an added feature that, you know, I like is, a family member, their number, to reach them at. Their pharmacy, number, would be a good thing. You know, just who to call in case of an emergency is a good thing to have on that call, um, list. So, that, you know I really didn’t think about that as much, when I was in the office, but it is a good thing.”

In reflecting on what it means to do med lists as an American Healthways clinician, L. S. offers an explanation that seems to have incorporated the information offered by Mentor M. in their discussion. Her interpretation of the mentoring experience is that she now considers additional features such as family members, other providers and emergency contact numbers on the med list. She seemed pleased with the experience and her new way of thinking about it, calling it “a good thing.” Writing about and talking about participating in mentoring provides a way to reify that experience to incorporate the interpretation consistent with learning about the role.

Reflective writing as reification of beliefs

The second tool designed as part of the Intervention to leverage the opportunity for reification was the set of reflective writing prompts (see Appendix A). As described in Chapter 3, the first set of prompts in Appendix A was administered at the beginning and end of Orientation in both the Role-based and the Control classes to provide comparative data. The second set of prompts was used only in the Role-based design to provide the opportunity for intentionally-guided reflection on the aspects of practice in the role. At two points during the course of Orientation, the clinicians were asked to respond with their thoughts and feelings to the prompts. The act of formulating their responses served to clarify the differences between what they did in the past and what they were doing now as American Healthways clinicians. The thoughts and feelings they wrote about had the effect of further reifying their beliefs regarding the practice of the role. Exemplary responses to each prompt are presented here for discussion.

Prompt A: Explain how a focus on long-term population management will be different than what you have done before in your nursing career.

L. S.'s response: In the hospital setting a nurse is focused primarily with this visit and the acute problem the patient has either from a new diagnosis or a chronic one. The acuity level is high in today's hospital setting so often you are in a "crisis situation" and as soon as the patient improves they are discharged. With this new role a nurse has time to educate, look at the whole person, their lifestyle and how it relates to their chronic condition. It allows the nurse to accomplish setting "doable" goals with the patient instead of trying to teach everything as they are heading out of the hospital.

Prompt B: What will you do differently than you have done before when you are providing care to people over the telephone?

L. D.'s response: I will focus more on my listening skills since this will guide what I say and do. I will have to search more deeply to find ways to connect with members and earn their trust. I will try to remember to let the member guide the call and respect their time. I will be more aware of my voice tone, inflection, etc. than I was in the hospital setting.

Prompt C: What does it mean to provide care to members as an American Healthways clinician?

J. J.'s response: I think that providing care to members as an American Healthways clinician can help fill in the gaps in the members' continuum of care. By this I mean that we are there when the doctors and nurses providing acute care are gone; we can meet them in their own home and in their own comfort zone; we can impact their lives by encouraging, empowering, and educating them on how they can manage their disease. We can make a real difference in their lives by helping them chose a healthy lifestyle, which will enable them to live life to the fullest.

Prompt D: As an American Healthways clinician, you are in a care enhancement center providing services to members in their own homes. What are some implications of both of these changes in the setting of care?

S. W.'s response: A pt has just had a heart attack...been in the hospital for 4 days and then sent on their way with a bag of pills and a lot of fear. This fear may not even become apparent to them until they are at home and the questions start arising. Most of the elderly population just don't want to bother anyone least of all the DOCTOR for answers to their questions provided they could get through in the first place. So imagine how comforting it would be to have a RN call them at this time to explain everything to them, empower them to know what questions to ask and what behaviors to work on. To understand their disease process and medications.

To be a part of this process is truly exciting for me as I am sure it is for the member.

One purpose of these reflective writing prompts was to guide the interpretation of experiences in ways consistent with the aspects of the role, as discussed in the first section of this chapter on negotiating meaning of experiences. These writings also served another important purpose, relating to participation and reification. As a representation of thoughts and feelings about the prompt, the response to the prompt becomes a reification of belief statements about the practice of work and about the clinician's role. These beliefs are reified in the form of phrases such as, "look at the whole person," "fill in the gaps in the members' continuum of care," and "to be a part of this process is truly exciting." Taking the time to reflect on their role provides additional opportunity to

discover and develop these beliefs. The design of the prompts gives a structure to guide the development of these belief statements in ways consistent with the aspects of the role.

The veteran clinicians in the community of practice have a common set of beliefs that their work produces positive outcomes for members both clinically and emotionally (evidence for these beliefs in the community of practice is discussed in Chapter 6). The belief in the goodness of their work sustains their resolve and commitment to the way that they practice nursing as American Healthways clinicians, even when some aspects of the role or some experiences of the work are stressful, tiring, or unpreferable. Thus, forming and fostering these beliefs is important in new clinicians. The reflective writing was a designed opportunity to facilitate belief formation. The clinicians generated responses that, when articulated and written down as an artifact, became objects that not only reified their beliefs at that moment, but could serve to reinforce and affirm those beliefs going forward. The clinicians' beliefs influence their interpretation of experiences and the meaning that they make of their participation in the community of practice. When these beliefs are congruent with the beliefs shared by the members of the community of practice, the learners become closer to the membership and form interpretations of experience in ways more similar to those of the community. The designed cycle of participation and reification, then, is a mechanism of role change through negotiation of meaning, interpretation of experience, and moving toward deeper membership in the community of practice.

“Becoming” as a process of learning and doing

Entry into the community of practice

In the Role-based design, the stories of veteran members of the community of practice were recorded and shown grouped together by common themes around the aspects of the role. For the new clinicians entering the community of practice, the stories served several purposes. First, the stories allowed the new clinicians to begin to get to know the veteran members of the community in two important ways. At one level, viewing the stories enabled the new clinicians to put names with faces, since each clinician who told a story was named on the screen that showed her or his story. The telling of the story conveyed something of the teller’s personality as well, to give the viewers an introduction to who they are.

At another level, though, viewing the stories afforded associating a story with a colleague that provides an entry into that colleague’s practice. The veteran clinicians had shared experiences from their practice with the new clinicians, and those stories provided an invitation to go and talk to the veteran clinicians. The shared experience is a point of entry into the community of practice, through interaction with an established member of the community. During the study, several of the participants in the class reported that they had spoken with the clinicians in the role stories intervention about their stories. Although the statement cannot be made with certainty, it is likely that the new clinicians would not have gone and spoken to those veteran clinicians without having seen their story. The opportunity presented by the story is for the new clinicians, in a place of legitimate peripherality as newcomers, to move into circles of social interaction with

veteran members of the community of practice. Typically, a cohort of new clinicians forms tight bonds as a group, but their primary social interactions with veteran members are their sessions with their mentors. The designed experience of showing veteran clinicians' stories facilitated expanding their participation with those members of the community. Because of the experience giving them at least some of the common knowledge of the history of participation in the role, the new clinicians joined the participation in the social life of the community sooner than they would have without that experience.

Learning to tell a story

First it should be noted that the stories created for the role-based intervention were themselves reifications of beliefs about practice and of aspects of the role of American Healthways clinicians. When they were recorded, the veteran clinicians were asked simply to tell a story about their experience as a clinician that they might tell to a newcomer. The captured stories became reifications of not only the events described in their narratives, but also of the aspect of the role they described and the beliefs about the work that they conveyed. The act of telling the story required that the veteran clinicians reflect on their experiences and choose an experience out of which they could relate a story. In many cases the clinicians had told their story before, because as the stories were being recorded before the study began, several of the clinicians told me that I “had to hear so-and-so’s story about the time that...” and they would go to get the clinician and prompt them to tell the story for the camera. These stories, then, were known to at least a part of the community and were pieces that rested in the mosaic of stories that made up

the common history of the community of practice. Sharing these stories with newcomers gave those newcomers some of the knowledge of the group history. As well, these stories demonstrated the role knowledge that the veteran clinicians knew and did in their daily practice. Because they had learned the role knowledge of their role, they were able to generate appropriate stories about what they did in their practice in their role.

The ability to tell a story of their practice, then, is another way that clinicians can demonstrate that they have learned the role knowledge of their role. Stories that the veteran clinicians tell each other and newcomers are typically stories about a particular call or particular member that was either funny to them, or that touched them and gave meaning to their practice. The ability to tell this type of story would be evidence that the new clinicians had adopted the perspective of the role and learned the role knowledge associated with it. By the end of Orientation, the stories that the new clinicians had begun to tell about their experiences did in fact bear a high degree of similarity to the typical story of the role told by veteran clinicians.

For example, a comparison of the following stories shows a similarity of theme and structure. The first story is one that was recorded by a clinician who had been with American Healthways for about a year. The second story was told spontaneously by one of the new clinicians in the Intervention class after mentoring on Day 14.

M. S. (AMHC clinician): I had a lady, whose daughter was dying of cancer, and she was diabetic. And for that moment, she didn't need to talk to me about diabetes, she needed to talk to me about how sad she was, and how hurt she was that she was losing her child. And as a mother myself, I could really sympathize and empathize with her pain, and through the phone I felt her pain. And she was depressed, and she just really needed an ear to bend, somebody to talk to, and I gave her an opportunity to cry, and laugh, and remember some good times about her daughter, and that alone was very healing for her. And she thanked me for that, for just being somebody to talk with. So, that made me feel good, that I was there to help her in another way. It wasn't clinical, it was emotional, and she

needed that healing for that moment. So we're not just nurses to talk about diabetes and heart disease, we're nurses that really feel for their pain, and we're there for them when they need that.

D. R. (new clinician, Day 14 after mentoring): I had a call where, we were talking to the lady about, actually heart failure, and she started talking about, she was just, basically broken-hearted, saying that, she'd had a husband die six years ago, and then a few months after that, her daughter did, and she said I just don't think that you should have to bury your children. And she cried throughout the call, but she was very encouraged that somebody was going to be calling and talking to her, because she needed to get that grief off of her shoulders, and she said that she had remarried, but she wasn't with, the love of her life, so, she told him that, and he didn't take care of her like her husband that had died, but he'd been married 50 years and she'd been married something like 40, and so they were just, like companions now.

Interviewer: So, even though, this was a heart failure call, and you spoke with her about the loss of, the losses in her life, does that provide value?

D. R.: Oh yeah, it allows her to vent her feelings, because I don't think, she feels comfortable doing that, now, with her new husband. You know, I don't think that that's something, I think that he kind of, judging from the call he kind of wants to step it back somewhere, and she still needs to talk. And so just being a good listener for her was the best thing we could have done. Whether she had heart failure or not, she did have a broken heart.

Both stories begin by establishing the context of the event, a call to a member who had a given chronic condition but who had other strong emotional needs that were not related to that condition. Both of the clinicians telling the story describe the member's needs and how they met those needs through listening and compassion, and both stories describe the benefit to the member that they provided. The two stories end with statements of the belief that they had given help to the person they spoke with.

As part of the designed Intervention, the stories told by veteran clinicians (including the one transcribed here told by M. S.) served the purposes discussed previously of illustrating aspects of the role and providing an interpretive lens for making meaning of experiences, but they also serve to provide a model for how to tell a story of practice as an American Healthways clinician. The stories selected to present here for

comparison are a particularly close match in content, but more generally the stories that the new clinicians learned to tell resembled the stories of the veteran clinicians in form. They followed the models provided by the stories in the Intervention in that they told stories from experiences they had had on calls with members, and the story chosen had a moral or reified a belief statement consistent with the role knowledge of the community of practice.

For example, another story told by D. R. described a call with a man who initially thought that he didn't need to know anything more about managing his hypertension, but D. R. identified several teaching opportunities and the man realized the potential value of the program [D. R., interview Day 14]. In another example, S. W. told a story about a long conversation with an elderly gentleman who nearly recounted the entire Korean War to her [S. W., post interview]. M. C. told a story about her mentor praising her persistence on a call with a man who only spoke Spanish as she tried to convince the man's daughter not to hang up because we could provide an interpreter for their conversations [M. C., interview Day 10]. Many of these stories were told by the group in the debriefing after each day's mentoring session, which served as a venue for practicing and refining their ability to tell stories appropriately.

The stories shown in the Intervention, then, facilitated new clinicians' understanding and adoption of the role on three levels: the stories gave examples of typical practice of the role, provided model interpretations of those typical practice experiences in ways consistent with the aspects of the role, and modeled how to tell a story that communicates belonging to a community of practice.

Becoming through learning and practicing role knowledge

The role-based intervention designed an experience that facilitated learning and practicing the role knowledge of American Healthways clinicians. The stories provided an interpretive frame for experiences in the practice of the role, to help the new clinicians understand the practice of the role in the way that veteran clinicians would understand it, facilitating the adoption of the role. The process can again be understood in terms of participation and reification. Hearing others, established members of a community of practice, interpret their experiences allowed the new clinicians to make meaning of what they experienced, and to reify that by learning how to “tell it” back to them and to others. Being able to converse with the community in the language of interpreted experiences allows the community to provide feedback that checks and shapes those interpretations further toward consistency with the norms of the group. In this way, role knowledge is reified and revised, and the knower moves closer to fully-realized membership and participation in the community. The role-based design moves the newcomers along a faster trajectory from legitimate peripheral participation toward centrality.

The new clinicians feel a sense of belonging as they engage in legitimate peripheral participation under the helpful watch of their mentor, and they learn to make meaning in the same ways as their mentor. There is a power imbalance in the relationship, as it is clear that the new nurse is expected to conform to the standards of practice embodied by the mentor, and to adopt the role as defined by the community of practice that they are seeking to enter. It is a power relationship that the new nurses enter into willingly, however, since their goal is to become a practicing American Healthways clinician. The questions of what happens when this mentoring relationship is a bad one,

or what about new nurses who are resistant to adopting the role as defined by the community of practice, are of interest for role-based design and may be explored in future research, but are outside of the scope of this study.

CHAPTER VI

ANALYSIS OF ROLE CHANGE

The first question, the design question, posed in this study was, what are the effects of designing the experience of learning a role, a process that has traditionally been emergent? The effect shown by the results is that the design strongly influenced the learners' conception of their new role in the community of practice, as demonstrated through their writing about and talking about their role and its performance. The second question posed in this research was, what can be learned from this study of role change that might inform design principles for role-based learning? The analysis performed here is one of tracing key events to form a trajectory of change in the learners' definition of their role over time. Key events are defined as experiences that result, either at the time or retrospectively, in a meaningful shift in the learner's interpretation of their experience and role. Most of the clinicians, when asked the question in the interviews of what had led to their changed conception of their role, answered by summarizing their experiences as "the Orientation." Upon further questioning and analysis, though, other personal life experiences and work experiences appear to have played a part in shaping their beliefs, their attitudes, and their understanding of the role and their work. In short, this analysis attempts to trace the development and evolution of role knowledge, and to further understand how to design a learning experience that influences that process.

This chapter presents one particular participant's data as a case to illustrate what the data revealed about role change over time. The writing and interview data for T. M.

will be presented in chronological order to try to trace one participant's trajectory of role change. The case will provide a temporal framework for discussion of key events.

In looking across the various sources of observational, interview, and writing data collected in the study over time, four possible criteria were decided upon for identifying key events. First, events were considered key when participants both described and demonstrated that they were reconciling old, previously held ideas or beliefs with new experiences or beliefs. Second, events that were major "firsts" for the clinicians (e.g., first time seeing the computer system) were coded as key events. Third, significant interactions with veteran members of the community of practice involving discussion of the role or the work were considered key events. Finally, if one of the study participants explicitly said that a particular event changed their thinking about the work or their role, that event was considered key. Examples of key events of each of these types are discussed in this chapter, interspersed with the case data presented.

Description of key events

At the beginning of every New Clinician Orientation, the nurses come into class having had two interviews during the hiring process, where they learned what the company does and how it works in broad terms. Generally (in every class I have observed) they are enthusiastic about the company and optimistic about working there. The enthusiasm comes from feeling hopeful about the value the company creates, in striving to improve the health of people with chronic illness as the way to financial savings for their insurers. The optimism is largely reactionary to the work environments that the nurses have left behind to join American Healthways, usually a hospital or

clinical care setting. The nurses generally have a pessimistic view of both the model of healthcare in those settings and the work that nurses are required to do in those settings. There is a unanimous voicing of a readiness for change in the type of work they do and the model of healthcare that they would like to operate as a part of. Even though there is a palpable optimism and hope, that is not to say that the nurses come into class on the first day with a strong belief that the American Healthways model of providing care works; that belief generally is formed later in the Orientation through learning and experience, as described in the previous Chapter.

The first data point of the study, the first reflective writing, was collected on Day

1. The response written by T. M. is typical of the group's responses: optimistic, forward-looking, not inaccurate but certainly incomplete in its understanding of the role.

Prompt: If a family member or friend asked you what you do as a nurse at American Healthways, what would you say? How do you define yourself as a nurse?

Response: As a nurse at American Healthways, I act as a coach and motivator for the clients to help them empower themselves to cope with their chronic disease(s). I define myself as a nurse as being knowledgeable, compassionate, caring and competent. I am excited that I will be able to develop relationships with clients and help them towards their goals of a healthier lifestyle.

Prompt: How is being a clinician for American Healthways different from your past experiences as a nurse? What would you tell another nurse who was considering applying at American Healthways about the job?

Response: Communicating with people is one of my strongest skills. In the past, I worked with clients and patients face to face. One of the biggest challenges working at American Healthways as a clinician will be communicating orally with clients, and not being able to see physical cues. When discussing American Healthways with a prospective employee, I would tell him or her to get ready to work in a very positive environment. The atmosphere is fun and friendly, but there is a presence of professionalism and hard work. Nurses should prepare to use their assessment skills on another level, by listening to clients.

[T. M. Writing #1]

In this early stage of the Orientation, the most salient difference for the nurses seemed to be the change in modality, providing care over the telephone. Many of the

nurses talked about not having the availability of hands-on information, either tactile or visual, to assess the patients' health status. Some of the nurses felt that only having the phone as a medium for interaction would be a challenge to them in trying to apply their nursing skills. When asked about this challenge, T. M. responded with a hypothesis that their listening skills would greatly improve.

T. M.: I think as a nurse, you get so used to, not only listening to people, you know, when you're face to face with them, but you're assessing everything. You're looking at their eyes, you're looking at their body, posture, if they have any physical things that stand out. Now, I picture being on the phone, that I'm just going to be listening to little cues, you know, that they're saying, if they sound out of breath, or things like that. I think your listening skills, you know like when people are blind, their hearing becomes extremely sensitive. I think that's going to be like us. We're going to be, just listening to everything and just kind of taking it from that. Because that's all we have, other than their past data from the last time they spoke with somebody.
[T. M. interview, Day 2]

The first few days of Orientation provide a lot of opportunities for learning about the new role and the work, and one of the primary tasks for the new clinicians is reconciling old ideas with new ones. For example, the new clinicians spend time in class talking about educating members on their disease condition in ways that will help the members learn and change their behavior appropriately. Although it is common for nurses and doctors in other health care settings to say that they teach their patients, often the setting is not conducive to teaching, the emotional or physiological state of the patient is not conducive to learning, and the nurse or doctor does not have the time to spend to do more than a cursory job. Part of understanding that teaching is an essential aspect of providing care in their new role means that they must reconcile their old conceptions about teaching from previous nursing roles with the aspects of their new role that differentiate it, e.g. change in setting of care, nature of treatment, time allowed. T. M.

writes a response to Reflective Writing #2 that shows evidence that her conception of the role is beginning to shift to account for these aspects.

Prompt: Explain how a focus on long-term population management will be different than what you have done before in your nursing career.

Response: Previously, when I was a nurse in the hospital the patients were not in the hospital very long, so nurses would educate the patient with large pieces of information. Usually, at discharge much of the teaching would be done. Working in this position will be different because we as clinicians will be educating the members in smaller increments over a long period of time. This will be more conducive to the adult learner as the members will be able to take one piece of information and think about it, and try to incorporate it into his or her life. This method of teaching will hopefully bring on a lasting change in the member's life.

Prompt: What will you do differently than you have done before when you are providing care to people over the telephone?

Response: Since I won't be able to actually look at the member, I will have to focus in on their voice (rate, tone, pauses) to get cues. This will tell me if the member understands what I am trying to teach, if they are scared or upset, or if they are interested. Since I will have more time discussing lifestyle changes I can be more creative with the member. For example, if the member is at home talking with the clinician the clinician can have the member look in his or her cabinet and they can discuss proper food choices. As a clinician providing care to the member over the phone I will have to picture in my head what is going on in the member's life by what he or she describes to me.

It will also be a challenge to get the members to feel comfortable with a clinician over the telephone. When the patients see you in person they can easily spot if you are someone they can trust by the way you look at them, touch them, and care for them. On the telephone, members can be distrustful at first since they may feel we are telemarketers. It is an extra special skill for a clinician to put the member at ease by talking with them.

[T. M. Writing #2]

In the first response, T. M. has incorporated what the Trainer has taught her about adult learning in class into her thinking about the differences between her prior role and her new role. Additionally, her response to the second prompt regarding the modality of care shows a more elaborate and detailed understanding of the issues. This writing was done on Day 5 of the Orientation, and in her response are embedded several concrete examples of how to interact with the member on the phone, as well as a more nuanced description of issues of trust when working over the phone. In the time since their first

two days of Orientation, the new clinicians had by Day 5 observed their mentors making calls to members for three days, and so had experiences with the actual practice of the role. What they had learned in the classroom as well as what they had experienced in mentoring resulted in shifting their conception of their role and their work.

Even the change in terminology from referring to people as “patients” or “clients” to referring to them as “members” represents a shift toward adoption of the role. The congruity of setting, nature of the work and terminology resulted in one of the clinicians, K. B., starting class on Day 3 by wondering aloud, “What do we call these people? Where am I today?”

K. B.: Gosh, it’s real challenging, because as you go through, and you’re thinking of, I still think of them as a patient. And, client was just way out in left field, it was real hard for me to think of a patient as a client. Member, I can think of them as a member of the health care team. So, that’s a little bit easier for me. Client, I associated them with someone in the legal field, or someone that, really wasn’t part of a health care management team in any way. But member, I’m just kind of having to repeat that a little bit, so that I make sure that I associate that properly. But, it’s a new term for me, and associating myself as a nurse with, the member, but then I have to associate it with the word team. So as long as I put team, and member, together, and realize that we’re all a part of that, then I can, I can associate and do that well.

[K. B. interview Day 3]

The challenge that K. B. describes is to reconcile the different terms for people she treated throughout her nursing career. In her nursing career, which spans three decades, she has experienced a shift in her field toward calling patients “clients,” a shift she says was difficult for her. She says that the shift required of her in coming to this role is easier for her. She associates the term “member” with meaning “member of the health care team” including herself, the member, and the member’s providers. The reconciliation of terminology also impacts K. B.’s understanding of setting, the work and the role as they are differentiated from her prior nursing experiences.

Reconciliation of old ideas with new ones more consistent with the aspects of the role occurred throughout Orientation. On the Monday after the first weekend in Orientation, some of the nurses talked about how strange it still felt to them to come to an office building instead of a hospital. L. D. said that there was a “comfort about being in the hospital” because “it’s familiar,” and M. C. says that she can walk into a doctor’s office and “do that,” whereas her practice in her new role and setting was still unfamiliar territory. An example already discussed in Chapter 5 was that of K. B. having to reconcile her prior conception of charting as one long narrative note documented in one place, what she called thinking in terms of “old nursing,” with a new conception of charting multiple notes in the categories of the computer system. After an interaction with her mentor on Day 7, L. D. realized a shift in her conception of the population-based focus of the clinician role. The contract team that L. D. was assigned to served a health plan customer in New York and New Jersey. L. D. had commented on the number of members assigned a program diagnosis of asthma, and her mentor explained that after September 11, 2001, there was a drastic increase in those states in the number of tests, procedures, and diagnoses related to respiratory conditions due to the dust and debris from the World Trade Center attack. The codes associated with those insurance claims get flagged as possible cases of asthma, generating welcome calls to the member to try to verify the accuracy of the diagnosis. L. D. reported that she hadn’t really thought about where the members were that they were calling, but that that conversation really brought home for her that she was dealing with a specific population located somewhere, that they weren’t in the same geographic place as her.

These are examples of typical key events where the new clinicians talk about and demonstrate a change in their conception of their work as nurses and their new role as American Healthways clinicians. The mentoring sessions provided many opportunities for experiencing the work and practicing in the new role, and the reifying opportunity of these experiences in “what I did today in mentoring” discussions has already been described in the previous Chapter. Something else the mentoring sessions represented, though, was time spent interacting with veteran members of the community of practice. The mentors, as representatives of the community of practice, are role models, literally modeling the performance of the role, and their interactions with the new clinicians provide the new clinicians with opportunity to ask questions and learn how the members of the community conceptualize the role themselves. For example, in one mentoring session, T. M.’s mentor told her that it helped her at first to think of herself as a home health nurse who visits over the telephone, but that it helped her visualize the member and remember that the visit is taking place in the member’s home. In this brief interview, T. M. talked about what effect hearing that metaphor for the work had on her.

T. M.: It makes it more personal. They [the members] can think back, if they haven’t had a home health nurse, maybe their parents did, or somebody in their family, had a home health nurse come in. And usually it’s a positive experience, you know, it’s someone there to help them and take care of them. They see their face and they might picture their face but hear our voice, and it brings back those same comfort feelings.

Interviewer: Do you have any experience in home health?

T. M.: No. I don’t. Just my clinicals with nursing school, and it was really good experiences, when I would go with.

Interviewer: Is that like an internship?

T. M.: Mm-hmm.

Interviewer: So are there any other metaphors that you have in your mind for how you think about this job?

T. M.: That’s a good question. No, I guess when she said that, it just kind of was like, ‘wow, that’s a great way of thinking about it.’ But I’ll think about that, and see if. [nods]

[T. M. interview, Day 7]

Through interaction with the established members of the community of practice, the new clinicians learned their conception of the role and moved toward centrality in their participation in the community. An example of informal conversation that provided an interpretive frame for experience occurred during the Orientation between a group of four experienced clinicians (the “Welcoming Committee”) and the new clinicians in the class. On the 11th day of Orientation, this group of experienced clinicians came into class for a “pulse check” with the class. The Trainer left the room, and for 45 minutes the group of veterans told the new clinicians that they were there to tell them all the things they needed to know but weren’t taught. The group established that they would answer any questions honestly and that the new clinicians could speak freely if they were not happy about anything. I was allowed to stay in the room to take notes only with the videocamera turned off.

The discussion that followed provided a look at the full range of working in the role of American Healthways clinician for the newcomers. The conversation consisted of loose questioning and answering about a lot of specific topics, as well as a great deal of story telling. The conversation proceeded over three themes that give a representation of the functional, emotional, and logistical facets in the range of experiences in the role. First, the experienced clinicians talked about some of the aspects of the work that were “unofficial.” For example, the abbreviation T.O.D. is used by the managers and the company to mean time on Dialer, or time that the clinicians spend logged into the computer system and are ready to make or receive calls. The group told the class that when they say T.O.D., they mean time off of the Dialer, and they shared a few tips about

how to work the system to get 'extra' time off the Dialer. By sharing information that could be perceived as illicit or conspiratorial, the veteran group was inviting the newcomers closer in to the community of practice. This is what you need to know to be one of us, they seemed to say.

Consisting mostly of storytelling, the second theme of the conversation turned toward sharing stories about their beliefs in the work they did. The new clinicians began talking about some of the mistake that they had already made talking with members during mentoring. The Welcome Committee clinicians responded by sharing some of their own biggest mistake, normalizing the new clinicians' experience. They also told stories about talking with irate or angry members, but noted that it was still better than dealing with angry or irate patients in the hospital who would yell at them to their face. Then, one of the Welcome Committee clinicians shared a story that her own father was a member in one of the programs, and that he would try to pass messages to her when one of the other nurses would call, including one time saying that she could move back home any time she liked, and she could "bring the bald-headed man she lives with" too. The story cracked everyone up, and then another clinician spoke up about her father being a member in the program as well. The clinician who shared the first story then said, "We're always talking to somebody's daddy." The theme of the conversation then centered on beliefs that their work provided help to those who needed it, and that that belief kept them going in the work even when it was difficult. Another one of the Welcome Committee clinicians shared her story as an example of this. She told the group about some problems that she was having, but that her interaction with a particular member kept her going. She was working with a 15 year old member with respiratory

problems as well as physical and mental developmental delays. The child's mother was very well informed on her daughter's conditions, and probably did not need the education provided by the program. But the mother told this clinician, "you're a person who's there for us and you care about my daughter," adding that the doctors don't have time or care the way that she does. The story seemed to impact the group, judging by their emotional response to it. The conversation continued, eventually turning to the logistical details of arranging space and materials, fighting fatigue and doing activities to make the work less sedentary. Overall, this 45-minute interaction with the experienced members of the community of practice served several purposes that define it as a key event. It invited the newcomers to expand their social interaction beyond their own peripheral group, and shared with them knowledge of the role known only by the members of the community, signaling to them that they were welcomed into the community of practice. Finally, the stories shared and the interpretations inherent in them reified beliefs about practice and the role that provide ways for the new clinicians to think about the experiences they had already had and interpret experiences going forward.

Another type of key event in the Orientation involved significant firsts for the new clinicians. The most notable two examples observed during classes were the first time that the new clinicians saw and used the computer-based Clinical Information System (CIS), and the first time that they spoke to a member. Other "first" events that had an impact to a lesser degree included the first time the new clinicians tried to document in the CIS while listening to a recorded mock call, the first time that they considered what they would say to members by practicing what they would say on an answering machine message with one another (to which K. B. stated, "this is getting real

now”), and the first time that they actually left the answering machine message on a call. On Day 2, the new clinicians saw and used the CIS for the first time. Many of them reported in class that the idea of using a computer system while also trying to talk to a person and do nursing over the phone was intimidating. Most of them, though, reported a sense of relief after seeing the system for the first time.

Interviewer: So, how are you feeling right now?

K. B.: Well, not as bad as I thought I would be doing. Probably the computer’s going to be my biggest, or I think my biggest obstacle to overcome, because.

Interviewer: I know you expressed that earlier.

K. B.: [laughs] Yeah. It’s probably the most intimidating for me.

[K. B. interview, Day 2]

L. D.: First impression, ah. The system’s fabulous. I was just amazed. It seems so user-friendly. Once I learned how to navigate through it, I mean, just where things are, I think it’s just, incredible. And that’s saying a lot for me, because I’m not a computer person, you know. I feel really good about, that I’m going to be able to learn it, learn it well.

Interviewer: So you do feel that now?

L. D.: Yes, I do! After, I mean, after seeing – I was with two mentors today, one left early, and, I feel very confident that I can, get there. I really do.

[L. D. interview, Day 2]

Coming into the Orientation, the nurses already know from their interview process that their primary tool for documenting their work will be the computer system. This change in the application of technology in their work as nurses was intimidating to many of them, and to varying degrees they had “built up” the idea of computer work as a perceived challenge to be overcome. The significance of seeing and using the CIS for the first time is that their imagined challenge became something real that they could investigate and begin to master. As well, the common experience of it not being “as bad as” they thought it would be can give rise to a shared, reified belief that learning the system will not be as difficult as they feared it would be, and this belief can give them confidence as they go forward and use the system more and more.

Another significant first event for the clinicians happened when they spoke to a member for the first time on a call. Similar to the experience of using the CIS for the first time, the new clinicians know that they will be speaking with members over the phone, but the experience is built up in their minds as something intimidating. In mentoring for the first week of the Orientation, the newcomers observe their mentors' work and listen to their calls with members. The mentors' competence and ease with which they perform presents a high standard for the new clinicians to aspire to, which creates some of the anxiety they report. Speaking to a member on a call for the first time is significant because it represents crossing the boundary from newcomer/observer to fledgling participant in the community of practice. It also alleviates the anxiety created around the event, as they almost all expressed in post-mentoring debriefs. One of the new clinicians, L. D., described her feelings as, "I feel like a ton has been lifted from me!" adding that she feels like she has been needing to talk to a member for days [L. D. interview, Day 9]. Others expressed much the same feeling.

M. C.: Oh, I feel great now, that the call is over! It was good, you know, when I was talking with the member, I felt very calm. When I got off the phone, I just fell apart! And I said to [Mentor T.], I said there's no way I could have done this without you pointing and clicking and writing down notes, because I was all consumed with this conversation, so.

Interviewer: Well, that's interesting, so you focused, just put those other things out of your mind and focused on the call.

M. C.: Just, focused in on that call. Yeah. It was amazing!

Interviewer: And so you were able to do it then.

M. C.: She [Mentor T.] said I did great, so. And I felt good about it.

Interviewer: Good! Well so now that you have, sort of jumped that hurdle, are you able to see yourself, doing this now, better than you were, able to see yourself doing it before?

M. C.: Yeah. I can...

Interviewer: You said something about, you had to persuade someone to get the number down, and.

M. C.: Take a call? Right. You know, I just, advised them that, this was a benefit provided to them by their insurance company and, so finally, you know she, I

think they might have been just a little bit concerned about the communication problem. You know, with him being Spanish, and having to have an interpreter. So, I talked to the daughter, and I just kept encouraging her to have him call, you know, and while she was saying that he's not, I can tell you he's not going to be interested, but I told her that he needs to call and tell us he's not. But he doesn't speak English! I said, well, we'll have an interpreter so he can speak with us, or he can tell us it's okay to speak with you, so.

Interviewer: So what did [Mentor T.] say about, she was tough?

M. C.: Oh, she said, [Mentor T.] says well, boy she was tough, but you were tougher!" [laughs]

[M. C. interview, Day 8]

In this interview, M. C. repeats what she had shared with the class in her post-mentoring debrief about her relief after her experience speaking with members for the first time. The example also illustrates how the debrief session provides an opportunity to reify experience from the interpretive frame of the role presented by the mentor, as well as an opportunity to learn and perform how to tell a story of the practice of the role, as discussed in Chapter 5. The experience of trying to perform a welcome call (the context of the above story) with a member who did not speak English is a challenge even to veteran clinicians. Left open to meaning making without the mentor to guide interpretation, M. C. could have had a wide range of affective responses or possible understandings of the event, ranging from thinking that she was being rude or demanding in what she did, to fearing that the call typified work that would be too difficult or unpleasant for her. Mentor T. supported her emotionally after the call (when she "fell apart"), assured her that the experience was not typical ("she was tough,"), and affirmed that she had done well but that she had also performed appropriately for the role ("but you were tougher!") by persuading the member to at least write down the inbound phone number and to take a call from the program with an interpreter, thus keeping the member in the program and open the possibility of intervention in his health.

To return to the case of T. M., her experience with speaking to members for the first time was also typical.

T. M.: I feel like a big huge weight has been lifted off my shoulders! It's so funny because I'm used to talking on the phone in my past job, and I don't know why, but I think I just worked myself up. Because you're doing two things and, you're talking on the phone and you're trying to navigate through the computer system, and you want to make sure that you hit everything, you know, that you're supposed to be saying. And for some reason you just get yourself all worked up about it. So, now, just having done it, I feel, like "Okay, I have achieved this."

...

Could I see myself? Oh, definitely, definitely. I think that was just from the first couple of days, because of, my values just really, coincide with this company's. I knew that, I would overcome it, but it's still scary.

[Would you say that this is a type of nursing you can see yourself doing?]

Oh, definitely, definitely.

[T. M. interview, Day 9]

Once the boundary was crossed from only observing and not speaking to members, to speaking to members on calls and learning to become full participants in the practice of the role, the focus of the classroom and the mentoring experiences quickly turned toward refining and developing competence in their performance. In the classroom, the curriculum consisted of the clinically-focused units such as the Cardiac and the Diabetes modules. The clinicians practiced mock calls in the classroom with the CIS and learned using case scenarios to talk about medications, action plans, and standards of care for these conditions. During their mentoring sessions, the clinicians refined their technique for speaking with members, developed fluency in speaking while navigating and documenting in the CIS, and became more comfortable in the practice of their role.

The third reflective writing done by T. M. on Day 10 illustrates that the clinicians had moved to a new level of understanding and comfort with the role.

Prompt: What does it mean to provide care to members as an American Healthways clinician?

Response: To be an American Healthways clinician means being an attentive listener, an empathizer, an educator, and a cheerleader. From learning the science of the computerized information system to encouraging a member to start a walking program one block at a time, clinicians wear many different hats. It is a special person who wants to take the time to help others learn about their own health, finding their own power to make lifestyle changes, and teaching them why it is so important to do so without nagging or preaching. Engaging, educating, and empowering members are the goals of the American Healthways clinician. Having the desire to want to learn the latest in healthcare treatments and being able to put that into understandable words for the members is another goal. Bridging the gap between the member and the doctor to improve the member's health is the ultimate goal.

Prompt: As an American Healthways clinician, you are in a care enhancement center providing services to members in their own homes. What are some implications of both of these changes in the setting of care?

Response: A member is usually more comfortable in his or her own home, so therefore the stress level is down, and hopefully the member is more able to learn. There is something about the anonymity the member feels, and he or she may feel more at ease to open up about concerns or problems. It can pose a challenge for the American Healthways clinician since the member cannot be visualized. However, as the clinician becomes more experienced the skill of listening to the member is sharpened, and this can almost make up for the lack of sight.
[T. M. Writing #3]

Her writing shows evidence of T. M.'s experiences having been interpreted in ways consistent with the role. As well, the length and style of the writing suggests an increased comfort with talking about the role and the work. The writing uses such phrases as "bridging the gap" and "engaging, educating and empowering the member" that echo the interpretations and belief statements that the mentors and the Trainer use to reify their practice. The descriptions of the goals of the role as well as how it is performed are well developed and representative of the role. Over the course of the ten days of Orientation leading up to this writing, key events in the new clinicians' experiences have afforded them a deeper understanding of the role as well as the ability to place themselves in the role, talk about the role and interpret experiences from its

perspective. Key events were not always in the Orientation experiences, however. Conversations outside of the community, with family members for example, or time spent reflecting on past experience also created the opportunity for important shifts in perception and understanding of the role and the work. For example, on Day 7 of the Orientation, K. B. shared a story with her classmates about a conversation she had had with her father about her new job.

K. B.: Well, I wasn't sure coming into this, exactly what role I'd play, and not being a big telephone person, and kind of being apprehensive about calling people, and so I kind of, was telling my dad what role I was going to be playing, and after I kind of explained to him this weekend what I'd done for the past, with my first four days, he said that, you know, he was very impressed. He said, gosh, it sounds like a really good program, and he said, because I was explaining to him how we help people, to understand more about whatever disease they have, and we offer a lot of educational materials, and my dad's very much a reader. So he was very interested in knowing that there's a lot of specific health care material available to whatever diagnosis a person might have, that if they're with the program and that information's available, we can just send it out, and it is free to the members. So, he thought that was terrific, and, he was glad to see that I was back in nursing, and that I was, you know, able to have a positive response on peoples' lives in that way.

...So, it's kind of, he wasn't real sure what the program was about, and I wasn't either until I actually got in it, so, that was, we both had a real good feeling about it when I got through telling him about it and then, after my first four days I was just sold on the whole thing.

[K. B. interview, Day 7]

Even though she had interviewed for the job at American Healthways, knew the basic nature of the work and seemed optimistic about it compared to her past nursing experiences, K. B. states that she had not been sure what her role would be and was not convinced that the program would work. She also states that she was not “a big telephone person” and felt “apprehensive” about the idea of calling people. Her conversation with her father, though, where she had the opportunity to reify her experiences during her first four days of work, provided her with an affirming

interpretation of her work, by his saying that she was able to “have a positive response on peoples’ lives.” Her father’s affirmation of her new role and her work seemed to be a key event that “sold her on the program” as well as her adoption of the role and its performance.

This story sharing was one of a few examples of a clinician speaking directly about an event that changed her or his conception of the new role. Others of the new clinicians spoke in their post-Orientation interviews about family experiences that influenced their interpretation of the work and their adoption of the role. J. J. for example told a story in her post-Orientation interview about how caring for her mother at home had given her a belief in preventative care and wellness intervention that provided her with a foundation upon which she built her conception of her role and her work as an American Healthways clinician. L. D. also spoke of a family event, though one much closer to the beginning of her Orientation.

L. D.: Well, I started, I really didn’t know much about, disease management, American Healthways disease management. I’ve always known that we drop the ball, in the hospital, with follow-up. And, I think it was, my grandmother’s illness and death, July 4th, no we buried her the fourth of July, started thinking about, really thinking about how this program might have helped her to have a better life, better quality of life, lived a little longer. So that’s retrospectively, but. Interviewer: So that’s something that, after you learned about this program you thought back on?

L. D.: Right, thought back on it, thought, wow, this is good. Maybe I can help someone else, not have to go through that.

[L. D. post-Orientation interview]

The death of her grandmother in the week prior to Orientation beginning was not something that L. D. spoke of in class during the Orientation, but as she says in this interview one week following Orientation, it affected how she came to think about her new job. Her process of becoming an American Healthways clinician led L. D. to give

additional meaning to the event of her grandmother's death, namely that the program might have benefited her grandmother. As well, that realization in turn provides meaning to the work that L. D. perceives herself doing and the role she has adopted, namely that she can perhaps help other members and their families not "go through that." These key events in the clinicians' lives reside outside the realm of the designed intervention, but are important to acknowledge for their influence on the process of role change.

As key events led the new clinicians to make the transition from nurses looking at a new role from an outsider's perspective, to adopting the perspective of the role, their new perspective affords reinterpreting past experiences, as well as shifting their imagination of their future experiences. Once they begin to identify with the clinician role, the new clinicians shift their talk and their attention toward their own development in that role. Their understanding of the role affords being able to identify their own needs for improvement and learning. For example, during class the Trainer was talking about a certain validated psychological instrument used as an assessment with certain members. The Trainer said that unlike other clinical assessments, which could be more conversational, this particular questionnaire had to be read exactly as it was written, which could sound stilted and artificial to the members. T. M. turned to her classmate with a smile and a shrug that seemed to say that she felt that way with all of the clinical assessments. When asked about it later, she elaborated on her reaction.

T. M.: Yeah, I was thinking I'm still pretty new at this, and I was thinking back to yesterday's, one of the phone calls I had where I spoke with a member, and I felt really scripted, because, we were going down, I think it was an osteoarthritis assessment, and you have to ask, you know, "What do you feel like your general health is, Very good, good, excellent," whatever and, you know, you're going down these and you have to make them choose one, and they're really not giving you the answer, and you're just like, arg! But yeah, I still feel pretty scripted, though. And I want to go towards that, just kind of conversation where I can, you

know, I don't feel like I'm having to stop and ask a question, and ask a question. Where they're just kind of leading me, or I'm leading them, but it's in more of a conversational way... Just, that it flows, and they don't feel like they're having a survey done on them.

Interviewer: So what do you think will get you there?

T. M.: Practice! You know, that's what my mentor and I were talking about afterwards, and I said, man, I felt like I was stammering, and just kind of going through the questions, and I said it's just going to be practice. Practice, practice, practice.

[T. M. interview, Day 11]

Using their mentors as role models, the new clinicians have a conception of what ideal performance looks and sounds like. In T. M.'s case, she believes, along with her mentor's encouragement, that it is simply a matter of time and practice until she is able to realize that performance herself. In her response, she identifies herself as "still pretty new at this," but implicit is her assumption that she will continue to develop in this role. What she does not say are statements such as she doesn't know if she gets it, or the role or the work still seems strange or different to her. Her perspective is from the inside of the role, looking forward, rather than from outside looking at how she will fit into the role. Her identification with the role is made explicit in her final reflective writing, on Day 15.

Prompt: How is being a clinician for American Healthways different from your past experiences as a nurse? What would you tell another nurse who was considering applying at American Healthways about the job?

Response: First of all, the training that an American Healthways clinician receives is phenomenal. I have never had a more thorough, well thought out, and FUN training at any of my previous jobs. I feel I have an even more wealth of knowledge to offer members, with up to date information that is reliable. This knowledge helps me feel confident I am providing the best care I can over the telephone.

In just the past few weeks when working with my mentors on the phone I have had the chance to speak with so many different types of members, with varying degrees of illness. It has felt so good to be able to talk with the members and give them my whole attention rather than wondering if I am getting an admission, or having to give medications. I can actively listen; pick up on things that I many not have heard before, and have a chance to ask the member questions.

I would tell another nurse that if they are ready to work with a company that treats its employees with utmost respect, gives nurses a voice, is innovative, and creates such a positive working environment, then American Healthways is the place to be. I am so proud to be a part of the American Healthways, and I am proud of what we stand for. Clinicians at American Healthways engage, empathize, educate, and empower our members.

Prompt: If a family member or friend asked you what you do as a nurse at American Healthways, what would you say? How do you define yourself as a nurse?

Response: As a clinician at American Healthways it is my primary focus to promote health and well being by assessing the needs of members with chronic illnesses, and then providing education, empathy, and encouragement to help the member begin to make lifestyle changes. From dietary, exercise, medication education to stress management, clinicians at American Healthways are able to provide a bridge between what a physician has recommended a member to helping that member incorporate these lifestyle changes into his or her life. As a nurse at American Healthways I would define myself as a coach and cheerleader by helping the member muddle through all the information he or she is receiving about their illness and apply it to their own lives.

[T. M. reflective writing #4]

At several points in her response she strongly identifies herself with her new role, and she expresses her positive feelings about her role change as well, stating that she is “proud of what we stand for.” Notable also is her interchanging of the terms “nurse” and “clinician,” suggesting (as discussed in Chapter 5) that her conception of her identity integrates her professional role, that there is no disconnect between being a nurse and being a clinician at American Healthways. Interestingly, a comparison of this writing artifact with T. M.’s third reflective writing shows that in Reflection #3 her description of the role is actually more articulate and comprehensive than this last writing. More of the aspects of the role are made explicit in the former document than the latter. One possible explanation is that by the time of Reflection #4, the new clinicians may be adopting the role to the extent that they have already begun to take some knowledge about the role for granted or as assumed or given. Reflection #3 may have served a purpose of providing an opportunity for reifying role knowledge, as discussed in the previous Chapter, but

perhaps by the time of Reflection #4 the knowledge had become part of the new clinicians' implicit understanding of the role. Stated another way, as participants enter a community of practice and move from peripherality toward centrality, they tend to forget what they did not know about the role (Lave, personal communication). They don't forget the knowledge itself that they have learned, but they forget that it was new knowledge that they had to learn about the role.

Part of T. M.'s post-Orientation interview was discussed in Chapter 5, but two other excerpts illustrate the shift in her role. In response to a question about what aspects of the work have been what she expected and what has surprised her, she responded that the high connectivity with members and their friendliness and receptivity have pleasantly surprised her. Her response about what she did expect follows up on her Day 11 interview about her desire to continue to develop her performance of the role.

T. M.: Let me start out with what I didn't expect. I didn't realize we would make so many contacts. I thought there would be a lot more answering machines. I don't know if it's the account that I'm on. Contract, with an older population, but it's been great. I can count on one hand how many times I've been hung up on or been treated rudely. I mean, it's been phenomenal. I'm just really excited and happy about that. I kind of, went in pessimistic, you know, because you try and prepare yourself, you don't want to, 'Oh, everything's going to be perfect'. No, I was like, okay, they're probably going to think I'm a telemarketer, and all this stuff. Which, you know, some you can tell are a little suspicious at first. But I've had really great response, I think. Now, what did I expect? I guess maneuvering through the computer, and just, right now I'm talking and maneuvering myself, but to be able to remember all the questions, like on the Assessments, and make it sound like I'm just conversing with them, rather than saying, 'Okay, what do you think your overall health is? Very good, good?' You know, I'm still having to do that. And you know, I expected that, but I want to make it better, but I don't think it's going to happen overnight either. And make it just be a conversation instead of a survey. Sometimes it just feels like a survey. I'm going to have to ask you these questions, you know. But those are the two big things that, one yes I did expect, and the other I was like, wow, this is great.
[T. M. post-Orientation interview]

Finally, when she was asked in the post-Orientation interview about her work now in comparison to her work in previous nursing roles, she is now able to articulate her dissatisfaction with other nursing work through the interpretive lens of her new role.

T. M.: What brought me to American Healthways? Oh, more of like, when you're working in the hospital and it's crisis management instead of prevention. You get kind of frustrated, because it's little things that they're doing. Maybe they're drinking too many Cokes and increasing that blood sugar. And it's like, 'you could just cut out a Coke or two a day, start out small, and then you make small changes like that,' and no one's brought that to their attention. It's pretty much, okay, they're in the hospital because they have an ulcer because their sugar's been running too high and they're not taking care of themselves, and, you know. You just get frustrated, and you feel like you want to be a part of changing the system. Being a little more holistic and preventative instead of crisis response.

[T. M. post-Orientation interview]

By reflecting on her past experiences, T. M. can reinterpret the meaning of those experiences in ways consistent with her new role. The meaning of her experience in the hospital was that she only saw patients in crisis, which was frustrating because no one was preventing those patients from reaching the crisis stage. Now, the meaning of that experience is to illustrate for her the importance of her new role and the nature of her work; she articulates ways to be more "holistic and preventative" in order to keep those patients out of the hospital and prevent complications such as ulcers. T. M.'s perspective from the role of American Healthways clinician looking out upon other nursing roles affords her perceiving the differences in the two roles along several aspects. She articulates the differences in the settings, time focus and nature of care because she now sees these differences more saliently in her new role. T. M. and her classmates came from diverse other nursing settings and became American Healthways clinicians through their participation over the course of the Orientation.

Tracing trajectories of role change

In the previous section, a great deal of data were presented as snapshots in time illustrating how new clinicians made meaning of their experiences and articulated their conception of the role they were learning. The data were presented chronologically, with discussion of other key events interspersed where they seemed relevant. The purpose of this exercise is to attempt to draw boundaries around ‘chunks’ of meaningful events in order to understand the change over time as a trajectory from identification in past roles toward full adoption of a new role. In order to organize the data into these bounded units, a framework for categorizing these experiences is presented here.

The model proposed here draws on the observations conducted for this study. It is based on a loose categorization of the key events traced through the Orientation experience in an attempt to understand the cycles of participation and reification that lead to shaping of role knowledge. The model is dynamic and is built on the assumption that conceptions of role and practice are always changing through participation and reification. Each of the four dimensions in the model provides a trajectory for role change.

Moving away from	→	Moving toward
Social interaction limited to newcomer group	→	Expanding social interaction with members of community of practice
Telling stories from past experiences	→	Reinterpreting past experiences through the lens of new role
Hearing role stories	→	Telling role stories
Observing practice	→	Performing and interpreting

Figure 4: Trajectories of role change

The key events through the Orientation where the new clinicians were invited to participate and interact with established members of the community of practice began to move them from their place as legitimately peripheral participants toward centrality in the community of practice. The course of Orientation had three such marked periods, each representing an expansion of social participation over the previous state. In the beginning of the Orientation, the group of newcomers interacts only with each other and with the Trainer. During this time, the group of new clinicians forms bonds as they get to know one another, and they form their own system of support. The Trainer serves as the only source for knowledge about the role and the practice of the role, and does so in a carefully designed way, using their talk about their previous roles and work experiences as opportunities to teach them about their new role and work. The second phase begins with the onset of the mentoring sessions. For the first time, the new clinicians interact one on one with a role model; though the Trainers are usually former clinicians themselves and can describe the practice of the role, the mentor is the first person that the clinicians see actually performing the role. During the mentoring phase, the new

clinicians experience practice in the role, the mentors provide their role-based interpretation of that practice, and the new clinicians come to understand how to make meaning of their experiences in ways consistent with the role. Through the relative safety of the one on one interaction, the new clinicians learn how to interpret experiences and talk about those experiences with a member of the community of practice. Over time, as more members of the community of practice seek out and interact with the new clinicians, they move into the third phase of expanding their social interactions. These expanded circles of interaction allow the new clinicians to move beyond the insular protection of interacting only with other newcomers, which is safe because they're all facing new challenges together, to interacting more centrally in the daily life of the community. These invitations to participate can be guided by design, such as using the story Intervention to provide an entry point with veteran clinicians, can happen formally, such as the "Welcome Committee" visit, or can happen informally, through, for example, conversations in the kitchen area or beginning to move into their cubicles and meeting their neighbors.

The second dimension of key events provides a trajectory for moving from interpreting based on the perspective of past roles to moving toward reinterpreting past experiences to be consistent with the new role. The Orientation provided two venues for this to happen, the classroom and the mentoring session. In the beginning of the Orientation, the clinicians had only their diverse past experiences to draw upon to make meaning of their new role. As they share the experience of the designed Orientation classes and as they accumulate experience in the role during mentoring, the new clinicians can begin to detach themselves from their identification with prior roles. Their

perspective shifts from being a nurse from some other setting looking in on a new setting, community, and practice, to being a new clinician at American Healthways looking back on prior nursing settings, communities, and practices. The threshold for that shift for each person is different and is probably not a discrete boundary, yet some of the data suggest that key events can be suggested as marking that transition. For example, K. B.'s conversation with her father seems to have "sold her" on fully identifying herself in her new role, and T. M.'s reflection on speaking with a member for the first time seems to represent a significant shift where she states that she can "definitely" see herself performing in her new role. As the newcomers move toward identification with the new role, their perspective shifts from viewing new experiences from their old point of view to reflecting on past experiences and reinterpreting them through the lens of current experiences.

The third dimension for tracing role change represents moving from receiving stories about the practice of the role to learning enough of the role knowledge to be able to generate stories of practice appropriate for the role. In the study, the new clinicians began to generate stories about their practice following their mentoring sessions. The time spent in class each afternoon where the new clinicians shared what they had experienced in mentoring that day afforded them the opportunity to reify those experiences and encode them with an interpretation consistent with the new role.

In the beginning of their Orientation, the new clinicians articulated their imaginings about the performance of the role based on the scant knowledge they had from their interviews and the first day of class. These imaginings can be thought of as primitive stories about the role that the newcomers make up and tell themselves. During

the Orientation, the veteran members of the community of practice interact with the newcomers and tell them stories about their history and experiences. Some of these stories, such as those told in mentoring, are used as teaching tools to illustrate a certain concept, while other stories are told because they are important stories in the shared history of the community, and knowing them signifies membership. Storytelling is a significant medium for communication among members of the group, and learning to communicate in this language is an important task for newcomers. Being able to construct a story judged as appropriate by the group requires practice and feedback in order to move toward stories that match the models provided by the veteran members of the community. D. R.'s story about speaking to the woman who "had a broken heart" is the type of story she could tell among veteran members of the group and it would be immediately recognizable as the type of story they would tell. Moving from receiving stories to being able to tell stories is an important trajectory toward centrality of participation in the community.

The fourth trajectory of role change involves moving from observing practice to performing in a role and interpreting those performance experiences in a way consistent with the beliefs of the community of practice. At the beginning of the mentoring sessions, the new clinicians sat with their mentors and observed the practice of work as an American Healthways clinician. Over the course of Orientation, they slowly moved from a place of observation only, to moving toward gradually increasing their responsibility for and mastery of elements of the practice. From observing and asking questions of their mentors, they began to navigate in the CIS, leave answering machine messages, and finally crossing the important boundary of speaking to members. Once

that boundary was crossed, their focus in the mentoring experiences quickly turned toward refining and developing competence in their performance, handling more complex tasks such as fielding inbound calls and using the translation services.

The organization of the mentoring sessions and the debriefing afterward created natural cycles of participation and reification, where the interpretations of experiences in mentoring become reified as stories about their work experiences and as belief statements about the role. These interpretations shape beliefs that the model of providing care in the role of American Healthways clinician works, and that they can still be nurses and have a positive impact on people's lives. When the new clinicians move out of the mentoring phase and into performance on their own, the interpretations reified during mentoring guide their interpretation of future experiences. When the Control class clinicians began performing on their own, they expressed a lot of dissatisfaction with performing one element of the work, the welcome call. The Intervention class, by contrast, expressed a high degree of satisfaction, and the statements they made about welcome calls made reference to the teaching opportunities and the benefit for members being in the program. The nature of the work was not different, but the beliefs they had formed about the work, their interpretations of experience influenced by their mentors, afforded them different perceptions of it. The new clinicians followed the trajectory of role change in both classes, moving from observation and receiving meaning to performance and interpretation of their own experiences, but they construed the meaning of the work in different ways as influenced by their different experiences during Orientation.

Design principles for Role-Based Learning

The purpose of the data reported in this Chapter was to trace key events in the situated learning of a role. From this understanding and the analysis of the effects of the Intervention in Chapter 5, principles for the design of role-based learning environments can begin to be derived.

First, the learners' conception of themselves as practitioners of domain knowledge can be strongly influenced by instructional design. In this study, two learning environments designed equally around domain knowledge but differently with respect to role knowledge produced different outcomes in how the learners conceived their role and perceived their work. The social interactions that produce learning in a complex social environment will always have an emergent quality to them that will resist being designed. Nevertheless, this study shows that by intentional design, some of the interaction can be made to produce learning consistent with the design.

Secondly, role-based designs for learning should focus on those aspects of the role that differentiate for the learners the role to be learned from prior work experiences and roles. The design should leverage the learning space created between the learner's current knowledge and the role knowledge of the new role to be learned.

Third, the design should recognize that learning occurs in iterations of participation and reification. Opportunities to influence the interpretation of participatory experiences may be created through intentional language and through guided reflection. The story that someone tells about what their experience means codifies the experience and can itself become the meaning of the experience.

Fourth, role-based design relies on the discovery of the belief statements held by the community of practice. Making these belief statements explicit, such as “we fill in the gaps in care,” provides a way for veteran members to reify and explain the reasons for their practice to newcomers, and also provides a way for newcomers to interpret their experiences.

Fifth and finally, role-based learning requires capturing and showing stories that reify the history, beliefs, and aspects of the role. The question of what makes a ‘good’ role story can be evaluated by whether or not the story is of the type that members of the community of practice spontaneously tell to one another and to newcomers in order to communicate about their practice, and whether or not it is aligned with the aspects of the role to be learned.

Conclusion

The results of this study provide evidence that designing learning environments with an explicit focus on identity and practice can facilitate learning a role. The results also provide a description of the process of role change as experienced by the participants in this study.

In the study, while the reflective writings, interviews and observational data suggested that the design strongly influenced the participants’ conception of their role, no data specifically measuring performance of the role showed evidence of effects from the design. Likely reasons for the apparent lack of differences are that the case-based writing assessment was not a good proxy for performance or that the documentation on the CDP was not sufficiently rich to afford differentiation between novice and expert performance.

Finding another measure of performance that was more sensitive to a link between conception of the role and performance might yield more informative results. Possible improvements for future study include using a measure of satisfaction with the work at multiple points in time, and replicating the Intervention at the same site where the Control group data were collected.

Several phenomena emerged during the study that suggest directions for future research. For instance, both cohorts of new clinicians were entering into established settings and established communities of practice. What would the process of learning a role look like if the cohort had to create the community of practice in a new site? When new sites are opened in the company, mentors from other established sites are often flown in for a few weeks to help train. In that situation, though, where the setting is essentially neutral, what would the relationship be between the new clinicians and the mentors? Does the balance of power change, and is there more self-determination of role in the new cohort? What relationship does imagination play in the process of learning a role, especially in a situation lacking role models, and can experiences be designed that re-create the social interactions through which roles are learned? What conditions could be created by employing distance learning or distance mentoring technologies in such a situation?

How well would the concepts and design principles articulated in this study apply in another workplace setting where new employees are learning a new role? The process outlined in the design principles should translate across settings, but it would be interesting to see what modifications were required in other settings. Role-Based Design adds an intentional social dimension to the design of learning environments that opens up

exploration of who the learners become and how they come to understand what they do as additional facets of what is learned.

APPENDIX A: Prompts for written reflections

Prompts for reflection on identity as a nurse (pre and post, both groups):

A. Please write down your thoughts and feelings in response to these questions. If a family member or friend asked you what you do as a nurse at American Healthways, what would you say? How do you define yourself as a nurse?

B. Please write down your thoughts and feelings in response to these questions. How is being a clinician for American Healthways different from your past experiences as a nurse? What would you tell another nurse who was considering applying at American Healthways about the job?

Prompts for reflection on role of American Healthways clinician (treatment class only, end of Week 1 and Week 2 of training):

A. Explain how a focus on long-term population management will be different that what you have done before in your nursing career.

B. What will you do differently than you have done before when you are providing care to people over the telephone?

C. What does it mean to provide care to members as an American Healthways clinician?

D. As an American Healthways clinician, you are in a care enhancement center providing services to members in their own homes. What are some implications of this change in the setting of care?

APPENDIX B: Case-based Assessment

Call case summaries:

Case #1: Nature of treatment (education, prevention): a call where the decision is what kind of care the member needs. They express several feelings about their condition and clinical opportunities, and the clinician needs to prioritize what to focus on.

Case #2: Proximity/modality: member is having symptoms and is not very talkative about what is going on. Clinician needs to ask questions to elicit information at a distance.

Case #3: Time: Goal-setting with the member in terms of short and long term goals, and communicating those to the member. Clinician's decision is how much to try to do on this one call.

Case #4: Population: Welcome call where the member is asking why me, okay why diabetics, okay what can you do to help? Clinician should explain population management.

Case #5: Setting: COPD patient where arrangement of furniture and ease of mobility in the home are an issue. Clinician needs to visualize member in their home and use that setting to craft interventions.

Case #6: Standardization: Member's friend has made several recommendations that run counter to evidence-based medicine.

Case #7: Technology: First care call to a member, proceed according to individualized care plan in Clinical Information System.

Case #1: You've just placed a call to Mrs. D. Carter, a 72 year old widow who lives alone and is a strat level 4 member of both the Diabetes and CAD programs. Mrs. Carter is feeling tired today and says that she does not want to talk for very long. You review the notes in Popworks and see that several of her SOC's are due for her diabetes, her BMI is 34.1, and although Talking Points have been reviewed for several Interventions, no self-care goals have been set. Furthermore, the notes for the last two calls indicate that Mrs. Carter has said the same thing, that she is feeling tired and does not want to talk for very long.

What would your priorities be for talking with Mrs. Carter on this call, and why? List only those you would try to address on this call. In what way would you speak with Mrs. Carter?

Case #2: You are on a scheduled care call with Mr. Jacobson, who at 59 is experiencing complications from heart failure. Mr. Jacobson is not very talkative, has shortness of breath, and has a wet cough that interrupts him every minute or so. He reports that he's had a cold for the past week or so, but he says that he can tough it out and so he hasn't been to see his doctor.

How do you imagine the rest of this call happening? How would you conduct the call, and why?

Case #3: You have just placed a call to Ms. Shackelford, a divorced 57-year old female who was introduced to the Diabetes program on her last call. You engage her in

conversation and learn that she works long hours as a bookkeeper for a law firm. She has been a smoker for many years, is significantly overweight and does not exercise. She was diagnosed with Type II diabetes several months ago. She reports that she has been to see an endocrinologist once since then, but she did not like her, preferring instead to call the nurses at her OB/GYN's office with questions. She is taking Glucophage, and knows that she needs to be monitoring her blood sugar, but has not done so since she ran out of test strips. She obtained her glucometer from a woman at her church who bought a newer one. When her supply of strips ran out for it, she stopped using it and has not had time to look into whether or not her insurance will cover the strips. She reports that she felt fine before she was diagnosed, and has also felt fine since starting the Glucophage. She says that she's too busy to worry about her health right now.

What would your priorities be for talking with Ms. Shackelford on this call, and why? List only those you would try to address on this call. In what way would you speak with Ms. Shackelford?

Case #4: You are in a welcome call campaign and you speak with Mr. Stein. Mr. Stein is a 63-year old retired schoolteacher with hypertension and CAD who despite his heart problems is in good spirits and has a sharp mind. He is intrigued by the Healthways program and has many questions for you. He asks you, why call him? Does your program call everyone with BCBS? Why some conditions and not others? What can you do to help people with heart disease?

How would you answer Mr. Stein's questions?

Case #5: You are speaking with Mr. Carroway, a 58-year old member of the COPD program. You review the notes while Mr. Carroway carries the phone across the room so he can sit in his chair. From the notes, you learn that Mr. Carroway has been a smoker for many years and becomes short of breath with little exertion. Listening to his breathing as he settles into his chair, you note that it is raspy and shallow, and it takes about 30 seconds before he is able to resume speaking with you. He reports that he is taking his medicines as prescribed, even though the cost is a significant portion of his disability check, and that he has stopped doing most things around the house during the day because he tires and becomes short of breath so easily.

What interventions would you undertake with Mr. Carroway?

Case #6: You are speaking with Mrs. Duncan about her husband, Mr. Duncan. Mr. Duncan is 67 years old and was identified as a potential member for the diabetes program. He was hospitalized briefly a few months ago for a broken collarbone, which he suffered from a fall from passing out. While he was in the hospital his bloodwork showed an A1c value of 9%. He does not like to talk about his health and states that he only has "a touch of sugar." Mrs. Duncan reports that she and her husband don't like going to the doctor, preferring to manage their health themselves. He is not on any medications besides aspirin and does not want to monitor his blood glucose. The main source of their medical information comes from a friend of theirs, Mrs. Chapelle, who has told them that Mr. Duncan probably just needs to lose some weight. Mrs. Chapelle recommended that both Mr. and Mrs. Duncan try the Atkins diet, which she claims has brought her own "sugar" under control.

What would you tell Mrs. Duncan about her husband's medical condition and need for medical care?

Case #7: You have just started making care calls as an American Healthways clinician. For any given call, you have to prioritize among different clinical assessments and interventions, medication issues, educational opportunities, areas for behavior change, and psychosocial needs.

Describe in general how you decide what to address on a call, and how technology supports or hinders your decision-making about priorities.

APPENDIX C: Timeline for orientation class

Day	Training topic	Mentoring topic
1	Reflection on problems with current healthcare system, proactive healthcare and disease management, mission of American Healthways	N/A
2	Overview of Popworks (computer-based clinical information system), documentation and outcomes, contents of welcome call	Meet mentors, observation of welcome calls
3	Welcome calls, Popworks navigation	Overview of information system, documentation and outcomes, contents of welcome call
4	Behavior change process, goal-setting, listening to mock calls while documenting in Popworks	Observe welcome calls, enter information in Popworks while mentor is on call, leave voicemail messages
5	Documenting in Popworks while listening to mock calls, engage in role-play scenarios with other clinicians	Practice welcome calls with mentor, enter information in Popworks
6-10	Cardiac conditions	Conduct welcome calls, enter/review medications, health assessments, review urgent/emergent procedures Observe scheduled care calls, document in Popworks, practice care calls with mentor
11-15	Diabetes conditions	Conduct care calls, review translation services, inbound calls

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