

Creating a Learning Environment to Produce Competent Residents:

The Roles of Culture and Context

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Six core competencies have been developed for use by residency programs in assessing individual resident training outcomes. This paper proposes that it is important to consider the role of residency culture and work context in shaping competency outcomes. Specifically, the development of a learning-oriented culture and favorable work conditions which facilitate the presence of that culture should be a high priority for residency programs and the organizations (e.g., hospitals) in which they are housed. This places formal accountability at the doorstep of these programs and organizations in helping to create a “competent” resident. Using ideas from management theory, we define specific best practices that define a learning culture and assert that current features of everyday resident work life decrease the chances that such practices will occur. Identifying and prioritizing the components of ideal-typical work environments for promoting a learning-oriented culture, in addition to assessing the presence or absence of both the components and learning best practices within residency programs, should become normal activities which complement the competency assessment process.

Introduction

The move towards developing core competencies which can help assess whether or not a resident in training is ready to be a practicing physician is significant in the evolution of medical training in the United States. These competencies, filtered into six general areas of expertise (see Table 1), have been developed through an inclusive, dialectical process involving residency programs and physicians across the country.¹ The development of these six competencies is perhaps only the beginning of a prolonged attempt to align medical training in the United States more closely with the contemporary health care environment in which physicians now find themselves. “The ‘substance’ of medicine is enduring”, as David Leach, Executive Director of the Accrediting Council of Graduate Medical Education (ACGME) states, but it is the forms through which that substance is conveyed which require change over time.² It is within this spirit that the competency movement has begun. It should also be within this spirit that additional

Insert Table 1 About Here

concerns are raised regarding how to modify other aspects of the *form* of U.S. medical training, to further enhance transmission of that substance which creates trained physicians.

This paper identifies the need to turn collective attention to the culture and context surrounding residency training in health care institutions such as hospitals. It is proposed that the establishment of a supportive, learning-type culture is of utmost importance in creating competent physicians.^{2,3,4} It is also proposed that the dynamics of

the surrounding organizational work context shape the establishment and maintenance of such a culture, and that many of these dynamics play out at present in ways that undermine the ability of residents to excel in the six general competency areas listed in Table 1. The cultures and everyday work contexts of residency programs are important factors which will contribute to some level of variation in competency acquisition across individual residents, residency programs, and the institutions in which both are housed. How we come to think about and do our jobs is inevitably shaped by the established norms and circumstances in which our learning takes place. Sustained learning occurs only within contexts that provide supportive conditions.⁴

In this way, the cultural and contextual features in which residency training is embedded should be identified, prioritized, and measured on a regular basis, in addition to the six competencies, to gain an accurate picture of how and why some residents (and residency programs) achieve higher performance than others in the various competency areas. Residency programs and the organizations in which they are housed (e.g., hospitals) must become more accountable for providing the necessary supportive climate and work conditions for the individuals they train. If the initial phase of the competency movement has produced a heightened expectation that individual residents demonstrate specific, measurable skills, an expectation must follow that they will be provided with the type of learning atmospheres in which they can have a fair shot at developing these skills. In this way, Figure 1 provides a visual representation of the interrelated nature of context, culture, and individual resident competency that is laid out in more detail in the remainder of the paper.

The Need for a Learning Culture to Cultivate Resident Competency

The characteristics associated with a learning-oriented culture can be gleaned from the writings of management scholars focused on the topic of organizational change and learning.⁴⁻⁷ Two characteristics are individual; three are group-based. These characteristics are general qualities that exist within a learning culture. However, there are concrete cognitive and behavioral tools associated with each of these qualities. These are the “best practices” listed in Table 2. While not an exhaustive list, the ones listed in Table 2 fall within four main categories: (a) communication and openness; (b) inquiry and feedback; (c) interpersonal risk-taking; and (d) mutual respect and support. These practices must be cultivated and supported by residency programs as much as the specific knowledge and skills that factor into the individual competencies.

Communication and openness involve both self-reflection (e.g., being honest with oneself about a situation, critiquing existing mindsets and behaviors) and participatory reflection (e.g., pushing the group to clarify and evaluate the assumptions underlying how work gets done within the culture, questioning group norms). It also involves communication that flows as much from the bottom of a hierarchy to the top as vice-versa. Inquiry allows individuals to become adept at questioning things as a normal course of their jobs. It encourages people to see failure events as opportunities for learning and not opportunities for blame. Inquiry also establishes a sense of trust among group participants as shared ways of looking at the world develop through interactive debate. Positive feedback involves activities that are designed to let people learn from rather than be chastised or shamed by their inquiries. This allows them to build a personal knowledge base that is defined by proactive and critical rather than reactive or

defensive thinking. It involves those with more experience helping those with less experience understand not just the “right” way to do things, but what can be learned from doing things the “wrong” way.

Interpersonal risk-taking involves individuals at all levels of an organization possessing a willingness to share their feelings and experiences on a regular basis, despite how others might perceive them. This risk-taking means that all individuals in a group, regardless of status or experience, are willing to share negative work events such as mistakes for the benefit of teaching lessons to the group as a whole. Finally, mutual respect and support involves treating co-workers, supervisors, and employees equally and consistently with respect to their unique abilities to contribute positively to the organization, regardless of where that person is located in the organizational or occupational hierarchies. Through mutual respect and support, a culture becomes one of inclusion rather than exclusion, where all individuals feel that they are part of a team.

Insert Table 2 About Here

Practices reflecting these four characteristics create the kind of culture in which residents stand a better chance of meeting and exceeding core competency requirements. For example, three of the competencies by definition need to have a learning culture in place to be achieved. Practice-based learning and improvement is facilitated by a residency culture in which disagreement is tolerated up and down the training hierarchy, taken-for-granted assumptions and episodes of failure are critiqued regularly by the clinical team, and essential knowledge is assumed to be held by all, regardless of status.

If residents are to have a mechanism for continually improving the manner in which they practice medicine, they must be able to honestly reflect on and appraise their actions and the actions of others.

Similarly, to become the kind of clinician suggested by the competency “interpersonal and communication skills”, residents need to be immersed in a culture that is supportive rather than blame-oriented, where intraprofessional relations are respectful and ongoing, and where positive reinforcement from supervisors is the norm. This type of culture makes two-way dialogue between all members of the team a normal rather than exceptional part of everyday interaction. It also helps to develop clinical team cohesiveness. Frequent interaction and mutual support leads to feelings of trust that enhance individual resident self-confidence and, in turn, resident willingness to engage in more open and timely information exchange around issues such as mistakes and uncertainty. Not having that culture promotes silence, detachment, and fear; ingredients that do not sharpen or enhance residents’ skills in dealing with people.

The core competency “systems-based practice” will be favorably cultivated by the presence of many of the learning best practices listed in Table 2, since systems-based thinking is the ultimate desired outcome of a learning organization.⁴ Residents must participate in clinical teams that possess a shared vision around patient care, clinical decision making, processing and dissemination of information, and managing failure. Systems thinking is cultivated by making residents feel that it is appropriate to ask questions about why certain things are done in the everyday work environment, even if those things fall outside the normal purview of physicians or are viewed by others in the culture as “normal practice”. Residents who can think in this way, i.e., constantly

identifying and reassessing the underlying cultural assumptions driving attitudes and behavior in the larger group (and in the particular setting in which they work at a given time), become the kinds of change agents that can evolve their practice as the environment, technology, and medical science demands.

Examples of the Influence of Context on Establishment of a Learning Culture

Aspects of the everyday residency work context enhance or undermine the prospects for a learning culture to exist at all (Figure 1). There is evidence that how these contextual aspects currently play out within many residency settings undermines the presence of learning-oriented attitudes and behaviors. For example, to engage in many of the best practices listed in Table 2, residents must have adequate downtime available in their workday. Residents need opportunity to engage in individual activities such as self-reflection and forgiveness. They also should have opportunities to interact with other residents in order to nurture qualities like support, the sharing of experiences, and empathy. For residents, however, downtime is in short supply. The accepted norm within the profession is that being a “good” resident involves “working hard”, which is not often defined to mean taking time out of the workday to find a quiet place and think on their (or someone else’s) immediate behavior, or to seek out an attending physician or resident solely to (for example) express concern for another resident’s situation or share a recent experience in a group context.

The recent ACGME incorporation of the 80 hour resident work week into the institutional requirements of programs could function either as a blessing or curse in the area of time for the resident.⁸ On the positive side, it may provide greater opportunity for the resident to engage in some of the best practices listed in Table 2. Yet, this

opportunity will likely need to be pursued outside the residency setting, as residency programs and the organizations to which they provide labor feel squeezed to get in other required educational and task-oriented resident duties within 80 hours. Ironically, the 80 hour workweek may thus undermine the ability of a residency program or health care organization to cultivate a learning-oriented culture as defined by the practices in Table 2. Add to this the documented problem of bad time management on the part of many residents, and the 80 hour work week becomes even less of a boon for encouraging individual engagement in practices such as inquiry, self-reflection, and dialogue.⁹

Fatigue is a contextual feature of the everyday setting that presently appears to affect residents in ways not conducive to learning.¹⁰ It is contextual because while it is the resident who experiences the fatigue, it is the surrounding work environment that plays a pivotal role in causing that fatigue. Fatigue generally causes cognitive impairment, reduced motivation, enhanced cynicism, and results in less energy available for creative, self-directed activities such as reflection and inquiry.¹¹ Within the residency environment, fatigue has been shown to lessen clinical performance and quality of care, lengthen the time needed to perform routine tasks, decrease attention span, cause more mistakes, and decrease the residency's ability to think creatively.¹²⁻¹⁴ Residents themselves cite fatigue as a major factor hampering their overall performance.¹⁵

The norm in most clinical specialties has been and still is to test the resident's mettle by subjecting them to extended periods of exhaustion as they conduct their work, through on-call, patient rounding, and "scut" responsibilities that make resident workdays look more like clinical triathlons designed to test the limits of physical and mental endurance. For some residents, sleep deprivation is an almost daily occurrence, while

almost all experience a meaningful amount of exhaustion during their residency experience. If duties directly related to patient care stand to suffer as a result of resident fatigue, as evidence suggests, then the kinds of practices listed in Table 2 suffer even more, since they may be considered a “luxury” for the resident and thus something easily jettisoned when exhaustion occurs.

Engaging in learning-oriented behaviors requires rested, focused individuals who can actively engage themselves and the group in ways that are not necessarily a natural part of the everyday work environment at present. Although one could argue that the 80 workweek requirement will produce less fatigued residents, there is no reason to think that is an automatic outcome. Having to work even 80 hours in any workweek, least of all one involving the kind of work physicians perform, is still excessive when considering what it takes to become an active and engaged learner. How many individuals in the course of their normal jobs, jobs that often involve much less responsibility and decision making skill, work 80 hours a week and still function at the peak of their learning potential? How proactive and interested might we expect someone to be in their (or someone else’s) learning while pulling shifts of 12 hours or more six days a week?

Workload issues in hospitals provide another aspect of the surrounding context that undermines the potential for a learning culture to occur around residency training. Nursing shortages, changes in reimbursement, sicker patients, changes in funding formulas that have limited the growth of residency programs, and fewer on-staff attending physicians conspire to create a situation where residents and their attending mentors across the country are working harder in hospitals.¹⁶ Working harder may be in keeping with the norm of being a “good” resident, but it filters into less time available for

learning, less interactions with attending physicians, greater fatigue, and other negative outcomes (e.g., decreased job satisfaction, increased burnout) not conducive to engaging in the attitudes and behaviors needed to fulfill the requirements of a learning-oriented culture. Attending physicians, fellows, and chief residents spend much less direct teaching time with residents than presumed, largely because of increasing patient and administrative responsibilities, and the increasing numbers of residents under their supervision.¹⁷ Residents also face situations in which an active focus on learning cannot be sustained throughout the workday, as they grapple with paging disruptions and interactions (e.g., with nurses, other services, attending physicians) that often address mundane rather than important issues.¹⁸

Lack of downtime, greater fatigue, and increased workload are three contextual factors that currently undermine the possibility for a learning culture to occur in residency training. Other contextual factors worth mentioning include the type of physician-nurse collaborative climate present in the resident's work environment, the extent of supervisory access in the environment, and the type of balance maintained by the resident between work and non-work interests and demands. For example, a high degree of physician-nurse collaboration in the resident's work setting enhances the chances that the resident can engage in practices around inquiry, openness, failure, and dissemination. This is mainly because nurses represent an "outside" group in whom residents can confide; a group to be used for sharing concerns, ideas, and doubts. The fact is that interns and junior residents come into more contact with nurses in the course of a normal day than with attending physicians or senior residents. A positive collaborative climate also decreases the level of overall tension within the work

environment, encouraging individuals to be more communicative around sharing experiences, asking questions, and expressing doubt or uncertainty.

Balance between work and non-work domains is a critical component of creating an active learner.⁴ It allows individuals to place work in its proper context and to be psychologically well adjusted in their overall lives. Having enough time to pursue non-work interests that offer respite and time away from work responsibilities and pressures, in addition to being allowed to engage in roles such as spouse and parent that offer personal rewards and satisfaction, result in a more engaged and willing learner.

Residents worry about maintaining some degree of balance between their work and non-work lives.¹⁹ Yet, existing residency training often sends a signal to young physicians that a productive, satisfying non-work life is a luxury rather than necessity in relation to their training. Non-work rewards are considered an appropriate “sacrifice” to be made by residents in order to become technically competent doctors. However, the lack of a rich non-work life produces more cynicism toward work, less enthusiasm for the proactive behaviors required for learning, and increased job burnout.

Finally, the structure of supervisory access in any residency setting helps to determine the extent to which a learning culture can exist. Residents across a variety of clinical specialties have limited access to their attending physicians.²⁰⁻²¹ This access is often confined to a few hours of teaching rounds per day, assisting on procedures on the floor or in the operating room, or in formal conferences. However, practices such as inquiry, dialogue, feedback, openness, and creative tension rely upon frequent and close interaction between residents and attending physicians throughout the day. They also demand easy, on-the-spot access to these individuals higher up in the training hierarchy.

Interaction and access of this kind builds trust within the group. This trust creates a degree of “psychological safety” for interns and junior residents, making them feel like they can become contributing members of the group, despite their less experienced place in the training hierarchy.²²

Conclusion: Identifying, Prioritizing, and Measuring Residency Culture and Context

If the surrounding culture and work context of everyday residency life provide the backdrop for developing competency as a physician, then these features must be identified, prioritized, and measured on an ongoing basis. How best to pursue these aims should be subjected to extended debate within the medical profession. The emphasis on culture and context emphasize organizational and program accountability much more clearly than do the competencies. Part of the initial discussion should revolve around an attempt to describe the components of an “ideal” training environment across residency situations, if one were to for a moment forget the entrenched norms about medical training that derive in part from “the way things have always been done” and an “I had to do it” mentality within the profession. Similar to other industries that have come to critical junctures where greater learning capacity must be created, medical educators need to begin with a blank slate and ask, “if we wanted to start from scratch and create the most favorable work environment for resident learning, what would it look like?”

This development of an ideal, from which residency programs can measure actual deviations, may be done through the development of cultural “templates” that serve as blueprints for creating specific work environments for residents. The use of templates is commonly found in formal evaluation studies of program implementation and in fields such as education.²³ It has also been used by professions such as nursing and academics

to improve upon training curricula or develop new educational programs.²⁴ A key goal in the development of cultural templates is to identify the individual, group, and organizational barriers that must be overcome in the setting to move more towards a defined ideal. A template could also serve as a focused assessment tool for monitoring how the actual residency culture fits the ideal. Documenting deviations from the ideal type culture could be done periodically in the same manner as the core competencies are assessed. That is, through periodic assessments done by residency programs using tools such as surveys of individuals (e.g., 360 degree evaluations), direct observations of work settings and resident teams, and interviews or focus groups involving attending physicians, residents at all levels, and other key non-physician stakeholders such as nurses and patients. Performing such an assessment annually, in concert with assessing core competencies among residents in a given program, would provide a comprehensive and well-rounded view of the educational experience within a residency program.

Each individual resident is part of a larger health care delivery work context and culture. It is this context and culture that helps determine the capacity of the individual resident to learn.⁴⁻⁷ Creating the right environment for the acquisition of core competencies is the responsibility of residency programs and health care organizations like hospitals. At the present moment, the profession is confronting the question of how to make residents, as the future physician “parts” of the health care system, better. It is important to turn the focus next to the larger whole in which these individual parts ply their trade. This focus is systems-thinking at its finest. It acknowledges that who and what residents become as doctors has as much to do with the everyday world surrounding their training as it has to do with their own brain power and hard work.

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Table 1. Core competency areas for residency training approved by the ACGME *

Competency area	Select elements
Patient care	<ul style="list-style-type: none"> ■ provide care that is compassionate, appropriate, and effective ■ communicate effectively and demonstrate caring, respectful behaviors ■ perform competently all medical and invasive procedures considered essential for area of practice
Medical knowledge	<ul style="list-style-type: none"> ■ demonstrate an investigatory, analytical thinking approach to clinical situations ■ know and apply the basic and clinically supportive sciences appropriate to the discipline
Practice-based learning and improvement	<ul style="list-style-type: none"> ■ analyze practice experience and perform practice-based improvement activities using a systematic methodology ■ facilitate the learning of students and other health professionals
Interpersonal and communication skills	<ul style="list-style-type: none"> ■ engage in effective information exchange and teaming with patients, their families and professional associates ■ work effectively with others as a member or leader of a health-care team
Professionalism	<ul style="list-style-type: none"> ■ demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population ■ show respect, compassion, and integrity, and be responsive to the needs of patients and society in a way that supercedes self-interest ■ demonstrate a commitment to excellence and ongoing professional development
Systems-based practice	<ul style="list-style-type: none"> ■ demonstrate an awareness of and responsiveness to the larger context and system of health care ■ use the resources of the system effectively to provide care of optimal value

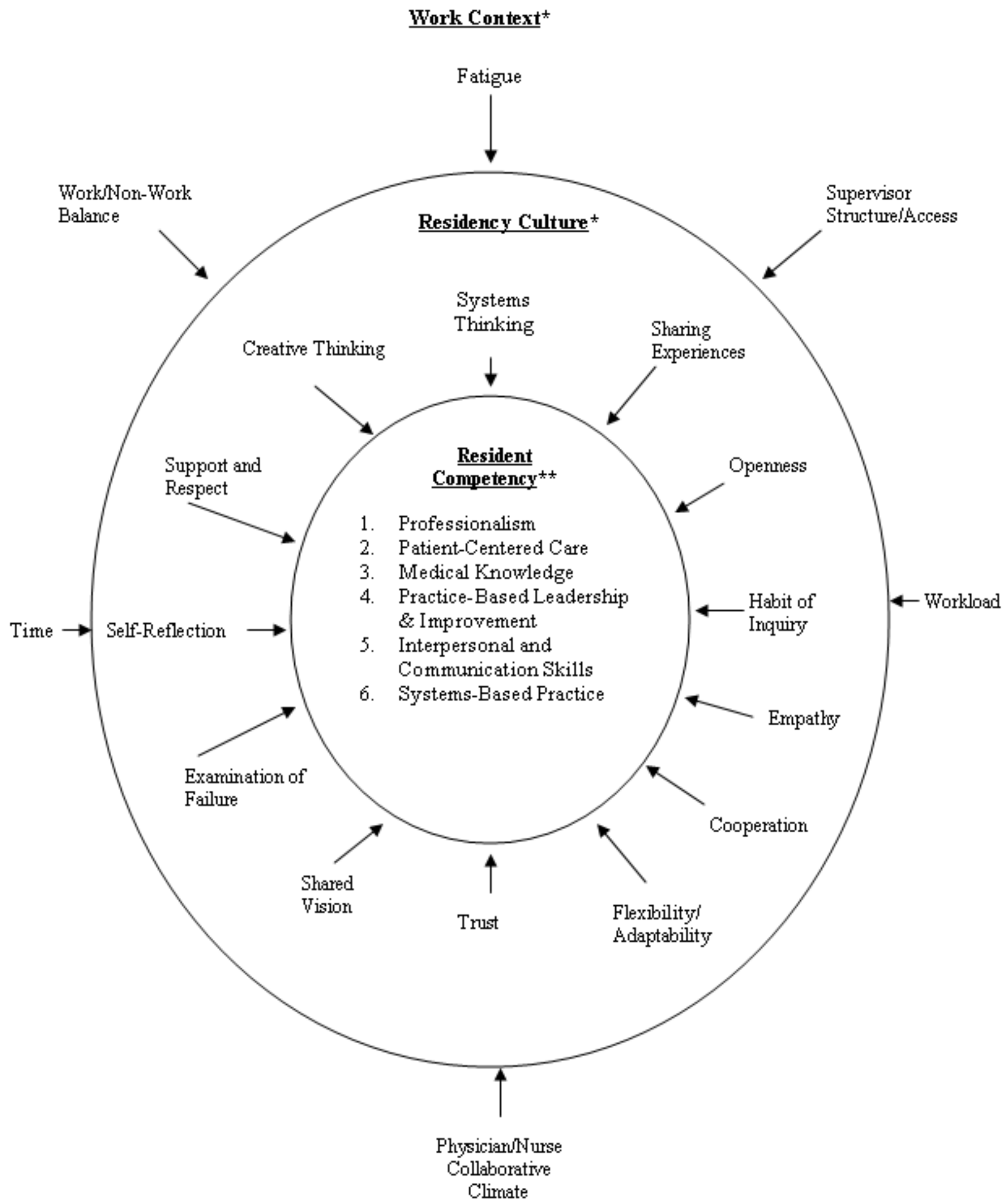
* Taken from the ACGME website, www.ACGME.org

Table 2. Characteristics of a Learning Organization and Associated Best Practices *

Characteristic	Definition	Associated best practices	Core competencies which benefit the most
Self mastery – individual	The ability to honestly and openly see reality as it exists; to clarify one’s personal vision	1.Positive reinforcement from role models/managers 2.Sharing experiences 3.Frequent interaction between supervisory levels 4.Emphasis on feedback 5.Self-reflection	Interpersonal and communication skills Professionalism Patient care
Shared mental models – individual	The ability to compare reality with perceptions of that reality; reconciling both into a coherent understanding	1.Self-reflection 2.Habit of inquiry 3.Forgiveness of oneself 4.Flexibility/adaptability	Practice-based learning and improvement
Shared vision – group	The ability of a group of individuals to hold a shared picture of a mutually desirable future	1.Participative reflection 2.Trust 3.Empathy towards others 4.Habit of dissemination 5.Emphasis on cooperation 6.A common language	Patient care Systems-based practice
Team learning – group	The ability of a group of individuals to suspend personal assumptions about each other and engage in “dialogue” rather than “discussion”	1.Participative reflection 2.Consensus building 3.Top-down and bottom-up communication flows 4.Support over blame 5.Creative thinking 6.Examination of failure	Medical knowledge Interpersonal and communication skills
Systems thinking – group	The ability to see interrelationships rather than linear cause–effect; the ability to think in context and appreciate the consequences of actions on other parts of the system	1.Practicing self mastery 2.Possessing consistent mental models 3.Possessing a shared vision 4.Emphasis on team learning 5.Views immediate realities within larger organizational and environmental contexts	Systems-based practice Patient care

* Adapted from the work of Senge (1990), Argyris (1999), and Schon (1983)

Figure 1. The Interwoven Nature of Context, Culture, and Resident Competency



*Need to be Identified, Prioritized, and Assessed in Relation to Competencies

**Dimensions developed, assessments to be defined by residency program