

Chapter 2

Analysis

Abstract The analysis phase is an important piece of the larger design puzzle. A recent study of instructional designers found that the analysis phase was rated as a high operational priority, both in terms of the frequency and diversity of comments (Ozdilek and Robeck, World Conference on Educational Sciences, Nicosia, North Cyprus, 4–7 February 2009, *New Trends and Issues in Educational Sciences* 1(1):2046–2050, 2009). In the analysis phase it is important to analyze the situation to determine if a problem exists and to explore possible solutions to those problems. An entire project can be undermined without proper attention to detail in the analysis phase. Common tasks undertaken in during the analysis phase include conducting a gap or needs analysis, identifying stakeholders, and defining the scope of the project (Morrison et al., *Designing effective instruction*, John Wiley & Sons, Hoboken, NJ, 2010; Richey et al., *The instructional design knowledge base: Theory, research, and practice*, Routledge, New York, NY, 2011). Investing time and effort in the analysis phase can help determine whether a community of practice for faculty teaching at a distance will help solve specific problems that individual institutions, departments, or faculty face. This chapter will explore mapping common analysis phase tasks with critical activities for developing a community of practice.

Keywords ADDIE • Analysis • Gap analysis • Needs analysis • Project scope • Community of practice • Virtual community of practice • Faculty development • Professional development • Domain • Community • Practice

2.1 Fundamental Element: Domain (Table 2.1)

2.1.1 Gap Analysis

Gap analysis is the process of determining the current state and identifying where you want to be (Franklin, 2006). In other words it is the definition of the problem. As with any instructional design project, a gap analysis can help ensure that the appropriate solutions or interventions are employed and can help mitigate future problems before they arise. A thorough gap analysis can help determine whether a community of practice for faculty teaching at a distance fits within the organization's goals, management, value system, and infrastructure (Gongla & Rizzuto, 2001).

When performing a gap analysis for a virtual community of practice for faculty teaching at a distance, it is important to determine if a problem exists that can be solved with a community of practice. Franklin (2006) noted that when performing a gap analysis employee performance is the foundation upon which the success of an organization rests. Based on that model, it may be prudent to conduct a gap analysis that considers larger organizational goals and any performance (teaching and learning) gaps that faculty may have. Questions that can help conduct a gap analysis might include:

- Are there institutional gaps (online enrollments, student satisfaction, attrition rates) in which there are gaps between the current status and where the institution would like to be?
- What does the desired state look like? (more online enrollments, more faculty teaching online, greater faculty satisfaction with support opportunities, etc.)
- Are there professional development related gaps between faculty who teach on campus courses and those who teach online courses?
- Do faculty report isolation or problems managing online course loads?

Table 2.1 Operationalization of domain-related tasks during the analysis phase

Task	Faculty development operationalized example
Perform a gap analysis (Franklin, 2006; Gongla & Rizzuto, 2001).	Conduct gap analysis to determine type of community, the scope of the community, and whether a community of practice for faculty teaching at a distance aligns with organizational goals and meet faculty needs.
Identify primary intent of the community (Verburg & Andriessen, 2006; Wenger et al., 2002).	Determine whether the primary intent of the distance learning faculty community will be problem solving, best practice development, tool creation, innovation, or a combination.
Define the scope of the domain (Wenger et al., 2002).	Limit scope to distance teaching and learning topics that are central to the faculty community's identity.
Determine organization alignment and seek organizational support through assessment (Ardichvili et al., 2002; Probst & Borzillo, 2008; Wenger et al., 2002).	Build a case for a community of practice and secure organizational support.

From the gap analysis it is possible to better understand institutional and faculty needs. It is possible to determine whether a virtual community of practice is necessary and what specific support needs that the community of practice can address. Conducting a gap analysis can also help determine whether a community of practice model for professional development is the best intervention for faculty and organizational needs. The gap analysis will help determine the type/intent of the community, the scope of the community, and whether a community of practice aligns with institutional goals.

2.1.2 Determination of Community Intent

Communities of practice take many forms. Determining the intent of the community of practice in the early planning stages can help alleviate any later misunderstandings about its goals (Wenger, McDermott, & Snyder, 2002). The American Productivity and Quality Center (2001) identified four different intentions for the formation of communities of practice for professionals: (a) problem solving for everyday discipline-related issues, (b) best practice development and sharing, (c) tool and job aid creation, and (d) innovation. Given that communities of practice must have interaction and reification in order to be effective (Wenger, 1998), it is likely that a faculty community of practice would have elements of all the intentions listed above. As faculty explore teaching best practices together there is an opportunity for them to share knowledge, solve instructional problems, create shared resources, and add to the field through innovative practices and research. Though there may be a variety of intentions for a community of practice, it is important to determine a primary intent, adapt structures, roles, and activities, and then fit other activities into those structures (Wenger et al., 2002). Likewise, Verburg and Andriessen (2006) identified five typical forms of communities of practice found in the workplace or professional organizations: (a) daily practice community—workers or participants who meet regularly to share and create knowledge, generally face-to-face; (b) formal expert community—a limited number of experts who influence knowledge for a larger community; (c) informal network community—an open membership group that forms through common interests, generally administered through electronic means; (d) problem solving community—geographically and organizationally dispersed members who deal with the same issues or problems, or an advisory group that is formed to solve a solitary problem; and (e) latent network community—members of a professional organization like the Association for Educational Communications and Technology (AECT). A community of practice that is designed to meet the professional development needs of faculty teaching at a distance may meet the definition of a problem-solving community as described by Verburg and Andriessen, but could easily fit one of the other forms. Table 2.2 offers examples of how faculty communities of practice might be defined within each community of practice type. Determining the intent of the community will help with other areas of the design process.

Table 2.2 Faculty community of practice example by community of practice type

Community of practice type (Verburg & Andriessen, 2006)	Faculty community of practice example
Daily Practice	<i>Departmental community.</i> Faculty from the same department or unit share teaching practices specific to subject matter or organizational knowledge specific to the department.
Formal Expert	<i>Expert community.</i> Small group of faculty and administrators from across disciplines—who are known experts in a specific area—exchange or develop a strategic knowledge for influencing the institution’s policies and practices. The formal expert community may prove to be core leadership group for other communities of practice.
Informal Network	<i>Interest community.</i> Faculty community formed to explore a specific topic of interest. Interest communities can form and dissolve very quickly based on hot topics of research.
Problem-Solving	<i>Practice community.</i> Faculty from different disciplines meet regularly to improve teaching practices, share resources and ideas, or solve pedagogical problems. Community participants can create and organize an institutional knowledge base or influence larger fields of study.
Latent Network	<i>Network community.</i> Faculty or industry representatives with high degrees of knowledge interact through conference or government organizations. Participation is often low or peripheral by most members.

2.1.3 Defining the Scope

Defining the scope of a design project can create parameters with appropriate boundaries, prepare allocation of resources, and set the stage for goal or objective setting in later planning stages (Morrison, Ross, Kemp, & Kalman, 2010; Richey, Klein, & Tracey, 2011). Since the scope of a community of practice for faculty teaching at a distance may vary widely, it is important to define the scope by limiting the community of practice knowledge-sharing ideas to specific topics. Wenger et al. (2002) suggested that the scope be wide enough to bring in new people, but still narrow enough to keep members interested in the community. Faculty teaching at a distance may have interests or needs that span the normal spectrum of faculty life, including tenure, work/life conflict, and other university commitments (Schroeder, 2011). Though it is tempting to try to address every interest or need that faculty may have in a single community of practice, the focus of a community of practice for online teaching and learning will have greater success if the scope defines parameters that limit potential topics to online teaching pedagogy and technology. Defining the focus and purpose of a community of practice early in the design process will provide an identity that will carry through all other design tasks (Wenger et al., 2002).

2.1.4 Assess Organizational Alignment and Secure Support

Smith and Ragan (2005) insisted that instructional system design must include an analysis of organization philosophies and restrictions. In order to be successful, communities of practice must have the support of the organization within which they exist. Communities of practice must align with the objectives of the organization in order to secure buy in from the larger organization leadership and the community members (Wenger et al., 2002). If there is no support from the larger college, department, or university for improving distance teaching and learning practices, faculty will be less motivated to participate. Additionally, without strong institutional or organizational support, communities of practice tend to fade away (Ardichvili, Page, & Wentling, 2002).

Since communities of practice that exist without the support of organization leaders rarely last, securing buy-in from the organizational leadership is imperative (Gongla & Rizzuto, 2004). University administrators and other managers are more likely to offer support for a community of practice if presented with a well-researched proposal (Wenger et al., 2002). Building a case for a community of practice can help with other tasks described so far, such as narrowing the focus and intent of the community of practice. Wenger et al. (2002) suggested that a proposal for building a community of practice should contain: an introduction to the potential value of the community of practice to the organization and rationale for support, a description of time-saving benefits of knowledge sharing (“not reinventing the wheel”), and a demonstration of how a community of practice can improve practices and prepare members to be thought leaders in the field. Probst and Borzillo (2008) found that an unhealthy competition for resources caused many communities of practice to fail even though they had organizational support. Therefore, it might be prudent to extend the proposal to include a request for resources and include a means for administrative participation in the community itself. Depending on the findings of the gap analysis, a proposal to secure buy in for a community of practice for faculty teaching at a distance may stress a community of practice as a means for faculty to improve morale, to share teaching practices, and to add to the research in the field of distance learning and/or instructional practices in a specific discipline. The addition of a list of possible ways that a university can provide support to the community of practice might include professional development resources such as conference registration and travel funding, or acquisition of software or tools needed to participate in community events or try out new teaching tools. Securing support early will clarify the community of practice domain and help mitigate problems that may arise as the community is formed (Wenger et al., 2002).

2.2 Fundamental Element: Community (Table 2.3)

2.2.1 Identify and Recruit Core Group

Designing a community of practice requires a strong core group dedicated to the creation of the community. Wenger et al. (2002) insisted that the most important component of a community's success is the vitality of its membership. During the earliest stages, the community of practice relies heavily on the core leadership to recruit members, set goals, plan activities, build trust, and establish norms, roles and scope of the community of practice (Gongla & Rizzuto, 2001; Tarmizi & de Vreede, 2005; Wenger et al., 2002). Community of practice development often begins with an established social network. Those who are already participating in an informal group are more likely to form the core group of a community of practice and take the lead in its construction (Wenger et al., 2002).

Identifying faculty teaching at a distance who already share practices and resources is an important first step in forming the core facilitation or leadership group. Additionally, faculty support personnel should be actively recruited as they may have access to the most current teaching and learning research and can help identify faculty teaching at a distance who might benefit from participation in a community of practice (Heath & McDonald, 2012). To legitimize the community of practice, it is important to identify and recruit potential cutting-edge *thought leaders* in the field who are well-seasoned practitioners (Wenger et al., 2002) and are vocally passionate about the community topic (Gray, 2004). Core membership for a community of practice for distance faculty should comprise individuals who are excited about distance teaching and learning and who exhibit best practices in their courses.

Once potential members of the core group have been identified, a plan for recruitment can be devised. It is important to understand why potential leaders would want to participate in a community of practice. Faculty are motivated by a variety of intrinsic and external factors. While Kiziltepe (2008) found enthusiastic students, social status, and prestige from research publications were factors influencing faculty motivation, Meyer and Evans (2003) found peer recognition, opportunity to advance in their field, study leave, access to resources, and conference attendance to be among the highest ranked. Based on those motivational factors, participation in the core leadership group of a community of practice for distance faculty may fit

Table 2.3 Operationalization of community related tasks during the analysis phase

Task	Faculty development operationalized example
Identify and recruit potential leaders, facilitators (Ardichvili et al., 2002; Gongla & Rizzuto, 2001; Gray, 2004; Heath & McDonald, 2012; Kiziltepe, 2008; Meyer & Evans, 2003; Probst & Borzillo, 2008; Wenger et al., 2002).	Identify faculty support personnel and faculty teaching at a distance to serve as potential members of the core leadership group and then actively recruit the core group membership using motivational factors for faculty to encourage participation.
Identify and assess potential members needs (Wenger et al., 2002).	Identify faculty who teach at a distance and conduct interviews to assess potential member needs.

well with the professional needs of potential leaders. Recruitment activities should include a description of how potential leaders can find research opportunities, peer recognition, and incorporate best teaching practices that enhance student enthusiasm through participation. If institutional support includes financial incentives, then faculty recruitment may include support for conference attendance and study leave. Participation benefits including research opportunities, study leave, and conference attendance should be included in recruitment strategies. Like anything else that requires a commitment of time/energy/money—the benefits need to be very clear to the participants.

2.2.2 *Identify and Assess Potential Members’ Needs*

It is important to have a good understanding of the potential members that the community of practice may serve. As has been discovered, communities of practice usually build on preexisting personal networks (Wenger et al., 2002). Since communities of practice have varying levels of participation, it is valuable to identify faculty teaching at a distance who are currently engaged in ongoing conversations around teaching and learning, as well as those not engaged in those activities. Although they may not participate, all faculty teaching at a distance are potential members of a community of practice.

Once potential members have been identified, a thorough gap analysis can help determine whether a community of practice for faculty teaching at a distance fits the professional development needs of the potential members (Wenger et al., 2002). As mentioned in the last section, faculty are motivated by a variety of factors. Finding ways to match potential benefits with faculty needs is an important step when developing a community of practice. Wenger et al. (2002) suggested that members of the core leadership group or a community coordinator should interview potential members in order to better understand common issues and needs shared by potential community members. Having an open dialogue rather than a formal interview may uncover an array of issues or topics that may not fit well within a community of practice model or change the focus and intent of the community of practice design. If a community of practice does seem to fit the potential member needs it is important to express how a community of practice may help meet the identified needs. Table 2.4 provides examples of how, in the analysis phase, community-related tasks may be operationalized for a faculty community of practice.

Table 2.4 Operationalization of practice related tasks during the analysis phase

Task	Faculty development operationalized example
Identify common knowledge sharing infrastructure needs (McDermott, 2001; Wenger et al., 2002).	Assess infrastructure needs for sharing knowledge through interviews with potential members and core leadership group membership.
Create community design (Wenger et al., 2002).	Create a comprehensive community design plan using the Analysis Phase Sample Community Design Planning Document (see Appendix A).

2.3 Fundamental Element: Practice

2.3.1 Identify Common Knowledge-Sharing Infrastructure Needs

A significant part of developing an understanding of potential community members in the analysis phase is the determination of the knowledge needs of potential members. Though communities of practice frequently form around topics community members have invested many years in developing, communities of practice are not formed just around a common interest. Communities of practice focus on practice, problems, tools, developments in the field, and things that work and things that do not work (McDermott, 2001). As discussed in the last section, conducting a gap analysis is a critical part of the analysis stage. When interviewing potential members to discover issues and needs, it is important to determine knowledge-sharing needs for the virtual community of practice. There are many potential knowledge-sharing needs that should be addressed. Wenger et al. (2002) identified the seven online technology infrastructure considerations that are critical for knowledge sharing: (a) a home page, (b) a conversation space for online discussions, (c) a repository for documents, research reports, best practices, and standards, (d) a search engine to find resources in the knowledge base, (e) a directory of membership, (f) a shared workspace for collaboration, and (g) community management tools including page counters, participation tracking, and the like. There are a number of tools that can meet the infrastructure considerations described above. When designing a virtual community of practice for faculty, the selection of a particular tool should be based on the specific needs as identified by a gap analysis.

2.3.2 Create Community Design

As with any design project, conducting a needs assessment and planning are key. It is in the analysis phase when it becomes clear whether the issue or problem has a possible design solution (Richey et al., 2011). During the analysis stage it is important to develop a clear plan for the community of practice that includes multiple opportunities for assessing needs of potential members, organizational needs, and the infrastructural or framework needs for a community of practice to develop. Wenger et al. (2002) suggested employing a work plan in the early planning stages to define the community's focus, build relationships, and identify topics and projects.

Using a checklist or a planning document may help ensure that all essential tasks are considered. Once the planning document has been completed designers can move the plan into action in later phases of the design process. It is important to note that the planning document can be used to determine whether a community of practice for faculty teaching at a distance is the appropriate solution for the audience, issues, or problem that one is seeking to address. It is possible that a community of practice

model will not meet a given institution, potential membership, or programmatic need. Appropriate planning and assessment in the analysis phase may deter potential problems in later phases (Smith & Ragan, 2005). Appendix A provides an example of a community design document that incorporates all components and tasks for a faculty community of practice during the analysis phase.



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