

CONNECT AND INSPIRE

Online Communities of Practice in Education

DRAFT

U.S. Department of Education
Office of Educational Technology

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About This Report

This report is targeted to education leaders and stakeholders who are interested in exploring, starting, or strengthening online communities of practice for educators. It makes the case for broadening educators' access to and participation in online communities of practice, which show strong potential to support professional learning and collaboration. To make this case, the report articulates the educational potential, offers practical guidance for online community sponsors and potential sponsors, and describes the U.S. Department of Education's leadership role in supporting online communities.

The report is designed to help education stakeholders and practitioners understand, implement, and participate effectively in online communities in order to:

- Make professional learning a timely, relevant, and ongoing activity that continually improves practice
- Leverage technology to create career-long personal learning networks within and across schools, preservice and in-service educational institutions, and professional organizations

Additional briefs will be available on the Connected Online Communities of Practice (COCP) website to supplement this report with more detailed information on related topics. Two briefs are currently available:

Online Communities for Educators: Guidelines for Planning and Implementation Technology for Online Communities of Practice

Planned briefs include:

Measuring the Success of an Online Community

Online Communities: The State of Practice

Community Research Questions & Methodologies

This report is a living document, as are the related briefs. Comments are invited. The documents will be updated periodically as additional research and new understandings about online communities of practice emerge.

To learn more, visit edcop.org.

Why We Need to Connect and Inspire Educators

Educators must be more than information experts; they must be collaborators in learning, seeking new knowledge and constantly acquiring new skills alongside their students.

—*Transforming American Education: Learning Powered by Technology*
(National Education Technology Plan 2010)

As the world grows continually more competitive and complex, America keeps asking its educators to do more. The nation demands better teachers, and more teachers, and a transformation of educator practices and the education profession. Teachers are being tasked to improve education so that the nation and its citizens can innovate and thrive.

America has set clear and ambitious goals for education during the next decade:

- Leading the world in the proportion of college graduates so that Americans can stimulate economic growth, contribute to our democracy, and compete and prosper in a global economy
- Closing the achievement gap so that all students graduate from high school ready to succeed in college and careers

In his 2011 State of the Union Address, President Obama set a new goal of preparing 100,000 new teachers in science, technology, engineering, and mathematics (STEM) fields during the next 10 years. He urged young people to make teaching a career choice—and challenged Americans to respect teachers as “nation builders.”

In many respects, this is a supreme compliment. It is an explicit acknowledgment that educators are the nation’s best hope for preparing students to meet rising expectations for college and careers. It is a call to shape a new generation to take on challenges that could make or break the nation’s future. It is a belief in educators’ creative capacity and professional desire to learn and grow with their students.

How will America transform the education profession to support today’s teachers—and prepare tomorrow’s teachers—to reach these goals? How will state, district, and school leaders develop their knowledge and skills to create world-class systems? How can we foster the professional experiences educators need to help all students meet rising college and career expectations? How can we engender respect for educators and education?

How can we improve professional excellence *and* the excellence of the profession?

The U.S. Department of Education is spearheading exploration of this two-pronged question. Clearly, it is critical to address the needs of both individual educators, who must strive to develop their professional knowledge and skills throughout their careers, and of the profession, which bears much of the responsibility for meeting America's commanding education goals.

To that end, among other initiatives, the U.S. Department of Education is supporting research into online communities of practice. Online communities already show strong potential to empower educators to collaborate, share resources and practices, access experts, extend their own learning, and solve problems more efficiently and systematically.

This research is grounded in the National Education Technology Plan 2010 (U.S. Department of Education, 2010), which offers **a compelling vision of connected teaching** to meet the need for more highly qualified teachers and a collaborative, empowered teaching force:

In connected teaching, classroom educators have 24/7 access to data about student learning and analytic tools that help them act on the insights the data provide. They are connected to their students and to professional content, resources, and systems that empower them to create, manage, and assess engaging and relevant learning experiences for students both in and out of school. They also are connected to resources and expertise that improve their own instructional practices, continually add to their competencies and expertise, and guide them in becoming facilitators and collaborators in their students' increasingly self-directed learning. Like students, teachers engage in personal learning networks that support their own learning and their ability to serve their students well (p. 40).

Online communities of practice support teachers' learning, enabling them to "collaborate with their peers and leverage world-class experts to improve student learning" (p. 42) and "extend the reach of specialized and exceptional educators" (p. 44) (U.S. Department of Education, 2010).

Collaboration is an effective approach for strengthening educators' practices and improving the systemic capacity of districts and schools—and, ultimately, improving student learning.

The U.S. Department of Education's research into online communities draws inspiration from educators around the world for whom collaboration is a core strategy for achieving systemic results. From Boston to Long Beach, from Singapore to Saxony, collaborative practice is central to significant, sustained, and widespread gains in student outcomes, according to the 2010 McKinsey & Company report, *How the World's Most Improved School Systems Keep Getting Better* (Mourshed, Chijioke, & Barber, 2010).

Like countless other professions, education is increasingly a field in which people must nourish their knowledge and skills or risk seeing them go stale. Knowledge and skill-building expertise are distributed widely—up and down the vertical ladders of organizations; across geographic, disciplinary, demographic, industry, and time boundaries; and in physical and virtual spaces. Changes in professional practice and significant increases in impact depend on teams of people working together, people empowered with knowledge and skills that are complementary—and that go beyond what any one person alone can bring to the table.

In education, teachers and leaders now share accountability for every student’s performance. Many problems that education systems face are complex, requiring better communication and coordination across stakeholder groups and among levels of organizations—top-down and bottom-up, across grade levels, disciplines, and schools—than exists today.

Technology provides opportunities to scale educators’ interactions—broadly and efficiently. Equally important, technology enables educators to spend their time more productively. Online communities offer educators valuable professional experiences that are more personalized, relevant, and timely for their top-of-mind concerns.

This report is not another “ask” for educators. Instead, it focuses on how the education community can *give* teachers and other educators the professional tools they need today to become a teaching and leading force of unparalleled excellence tomorrow—and for many tomorrows to come.

Working Definitions

Personal (or professional) learning network (PLN)—A group of people and information sources that can help an individual reach personal or professional goals. For an educator, a PLN guides learning, points to learning opportunities, answers questions, and contributes knowledge, experiences, and resources that respond to individual needs (Tobin, 1998; Warlick, 2010).

Community of practice (COP)—“Groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger, McDermott, & Snyder, 2002). True communities of practice have three core elements (Wenger et al., 2002):

- **A domain**—A shared area of interest (e.g., science instruction or inquiry-based learning or autism spectrum disorder) to which members are committed and in which they have a shared competence that distinguishes them from other people.
- **A community**—In pursuing the domain, members engage in joint activities and discussions, help each other, and share information. This social dimension is a hallmark of true communities of practice.
- **A practice**—As a result of pursuing the domain together, members develop a repertoire of resources—experiences, stories, tools, ways of addressing recurring problems—that together define the practice of their profession or area of shared interest.

An **online community of practice** supports these three core elements with technology-based platforms, tools, features, and configurations, removing barriers of time and space.

The Educational Potential of Online Communities of Practice

Technology empowers teachers like never before to support their personal mission of providing the best possible education to their students.

—U. S. Secretary of Education Arne Duncan
November 10, 2010

Documented Benefits of Online Communities of Practice

Research and professional experiences demonstrate that online communities of practice complement education improvement initiatives. Online communities can support systematic, transformative change in teaching and learning. Specifically, there is evidence (adapted from Booth, 2011) that online communities of practice empower educators to:

- **Access knowledge.** Online communities can provide educators with opportunities to “gain equitable access to human and information resources not be available locally” with a quality of dialogue “equivalent or in some case greater than face-to-face” interactions (Schlager, Farooq, Fusco, Schank, & Dwyer, 2009).
- **Share knowledge.** More than three-quarters of educators who use online communities value them for knowledge sharing (PBS & Grunwald Associates LLC, 2011). Online communities provide notable opportunities for educators to learn from one another, with the “potential to expand and enrich learning opportunities for educators by employing alternative processes not available in face-to-face instruction” (Chen, Chen, & Tsai, 2009). And there are tantalizing indications in some recent studies that potentially large proportions of educators participating in successful online communities may be applying these learnings to practice (Duncan-Howell, 2010; Vavasseur & MacGregor, 2008).
- **Create knowledge.** Online communities potentially provide a fertile and sustainable environment for new knowledge creation (Wang, Yang, & Chou, 2008) by supplying collaborative tools that have few equivalents in the physical world and bringing together “creative geographies”—like-minded educators, or educators with common interests, who may be far apart geographically.
- **Build professional identity, relationships, and collaboration.** Online communities strengthen professional identity, including investment in and ownership of education as a profession (Gray, 2004; Hew & Hara, 2007). They “provide a sense of place” and reduce “feelings of disconnectedness, isolation, and aloneness” (Duncan-Howell, 2010). In fact, this often can be a primary motivation for joining and belonging (Gray, 2004). Online communities also can “be used to increase communication and collaboration” (Vavasseur & MacGregor, 2008), and to “explore ideas” while “sharing emotions” and “experiencing a sense of camaraderie” (Hur & Brush, 2009).

Online communities also can give voice to those educators who, for whatever reason, may be reticent about speaking up in face-to-face professional interactions or simply feel they are not being heard. Indeed, online communities of practice could be used to engage and support more educators who are most in need of help and most vulnerable to disaffection. Newer teachers, for example, might find a lifeline in online communities. Fully half of all new teachers, in fact, leave the profession within the first five years (Ingersoll & Smith 2003), often because they feel ill prepared, overwhelmed, and under-supported.

Extending Established Practices and Research on How Educators Learn

Online communities of practice can be one means—but not the only means—of increasing professional knowledge, connectedness, and collaboration. More traditional professional development and networking activities—such as self-directed learning, formal professional development and classes, informal face-to-face interactions, and face-to-face professional learning communities in schools, districts, and states—continue to have a place in the mix of experiences that lead to personal and professional growth.

For example, research shows that face-to-face professional learning communities (PLCs) help teachers create a collaborative culture that “develops teacher leadership explicitly focused on building and sustaining school improvement efforts” (Center for Comprehensive School Reform and Improvement, 2009) and improving student learning (Rentfro, 2007). Participation in PLCs may reduce educators’ isolation, foster a shared responsibility for student success, increase job satisfaction and morale, and reduce absenteeism—benefits that contribute to improved student achievement (Center for Comprehensive School Reform and Improvement, 2009).

Research shows that the professional development embedded in the work of PLCs is effective in supporting ongoing improvements in teachers’ practice, according to a National Staff Development Council report (Darling-Hammond et al., 2009). This research also finds that effective professional development is intensive, ongoing, and connected to practice; focused on everyday challenges of teaching and learning specific academic content; and aligned with larger school or district reform efforts. PLCs also “offer an approach to professional development that provides teachers with ongoing support, promotes a culture of collegiality, and engenders a shared sense of intellectual purpose” (Booth, 2009).

Interconnectedness enhances PLCs. Their effects “are optimized when they exist not in isolation but as part of overlapping, interconnected communities of practice” (Annenberg Institute for School Reform, 2004; Mitchell, Wood, & Young, 2001; Resnick and Hall, 2001). PLCs can extend to administrators, support staff, community members, and students.

For many years, professional associations and related organizations have created opportunities for educators to learn and collaborate in peer communities as well. Many

educators belong to these organizations, read their publications, go to their conferences, and participate in their activities. Increasingly, professional organizations are taking these interactions online, making them more open and inclusive, and customizing them for specific needs, such as elementary or secondary education, content areas or subjects, and special populations.

Online communities of practice can intersect with and extend these many varieties of professional learning. Face-to-face discussions and follow-up questions can continue online, after or between events. Online meetings and conferences can reach wider audiences, considering the many educators who cannot travel—an especially important benefit at a time of widespread school budget constraints. Information, resources, and expert advice can be shared broadly and indefinitely. In online communities of practice, more people have more opportunities to contribute and connect.

Online communities can provide opportunities that are consistent with the research on how educators, like people of all ages, learn. Interpersonal learning and collaboration help teachers build their knowledge, skills, and “sense-making” abilities (Bransford, Brown, & Cocking, 2000). Learning is a *social* activity. People learn from their peers and from experts. They learn by talking and by teaching others. They learn through interactions that build on their strengths, interests, and needs. They learn by asking questions and acquiring knowledge and skills that are relevant to them—*right now*. They learn by testing newly acquired knowledge and skills in their own practice, taking risks in a safe setting, and getting constructive feedback. They learn by sharing successes and failures and by collaborating with others to answer a question, conduct an inquiry, or solve a problem (Bransford et al., 2000).

Opportunities—and Challenges—for Online Communities of Practice

With increasingly engaging and affordable technology, online communities can augment the good work that individual educators, educational institutions, and professional organizations are already doing. Online communities can create learning environments that foster the conditions that research indicates lead to meaningful learning. They are a viable solution to improving professional excellence and the excellence of the profession.

At the same time, there are challenges to increasing educator participation in online communities of practice. Institutional factors, such as a culture of high expectations, continuous improvement, and shared responsibility for student success, influence professional learning and collaboration as well.

Moreover, education tends to be an isolated profession. “Many educators work alone, with little interaction with professional colleagues or experts in the outside world” (U.S. Department of Education, 2010, p. 39). U.S. teachers have less time in their schedules for professional learning than their peers in countries with high student performance on international exams (Darling-Hammond, 2010). And, at this point, U.S. educators typically earn no formal credit or even informal validation for participating in online communities of practice.

Still, many American educators *do* find time for—and value in—online communities of practice. About one quarter of all K–12 educators now belong to one or more online professional communities, citing desires to get information, share resources, feel connected, and collaborate as primary motivations (PBS & Grunwald Associates LLC, 2011).

What Comes of All the Online Talk?

The small, closed community of 300 master educators who make up the Teacher Leaders Network (TLN), part of the Center for Teaching Quality, may have some answers. Small groups of educators are tasked with studying hot topics in education and developing white papers based on their collective findings, which are then made publicly available on the site. In TLN’s five-plus-year existence, the community has “referenced and created literally thousands of insightful and provocative resources during their daily conversations,” according its website, on topics ranging from accountability to working conditions to technology in the classroom.

For One Teacher, “Sharing It All Is More Powerful” Than a Solo Practice

“People participate in online communities of practice because it is meaningful and useful. They satisfy a real thirst for connectedness. You won’t do it if you don’t get satisfaction out of it.

“When I have a question, when I’m unsure of something, I go to these places. It’s a safe and secure environment to take risks and ask questions. I stumble upon things that I didn’t know I was interested in—like a cool video I could use to teach media literacy to my fourth-grade students. There’s a surprise element in it that makes me think, ‘I wonder what’s coming today?’

“It’s a ‘push-and-pull’ dynamic: I push in when I need something. I pull out stuff I may have just encountered.”

—Andrew Gardner, educational technologist, Grades 3–5
The School at Columbia University

Andrew Gardner, educational technologist, Grades 3–5 at The School at Columbia University, is one teacher who seems to have found a sweet spot for his professional growth in a blended learning environment that has both local and global connections. Locally, Gardner belongs to the New York City Independent Schools Technology Resource Group, which includes technology specialists in more than 100 city schools. The group meets face-to-face every month, rotating venues among the city’s five boroughs, to access, share, and create knowledge—together and with outside experts—about new technologies that could be useful for instruction. Recent topics, which are generated by the group, include [VoiceThread](#), a tool for collaborative conversation around images, documents, and videos; [Finding Dulcinea](#), “the librarian for the Internet age”; [Sweet Search](#), a search engine for students; and [Moodle](#), a course management system.

“When people come together in a group and create an agenda for their own learning, it’s more powerful,” Gardner says. “It’s a group of people working together toward a goal or to build knowledge or solve a problem. There’s more ownership than just hearing from one speaker. Maybe a number of people know something” about any given area of interest.

Gardner is also an Apple Distinguished Educator and a Google Certified Teacher, both of which give him access to online communities of educators worldwide. He admits that he tends to read and “lurk” more than contribute to these groups—which can be a valid and effective form of learning that complements the face-to-face experiences. “I have a slightly irrational fear of writing,” he says, although he is an active blogger who regularly shares his own students’ work. Still, he likes learning about what leading educators are up to in these groups and by following other “smart people” on Twitter. In this educator’s largely educational technology-focused online communities, the range of participants cuts across all demographics. It’s their “attitude” toward learning, connecting, and participating that they all have in common, he says.

Research Needs

Research on online communities of practice in education is still in its early stages. Answers to essential questions remain to be discovered, such as: How can face-to-face and online professional learning and collaboration be used together most effectively? What types of online content, activities, and interactive features best support learning for educators? In what ways do online communities positively impact professional practice—and how can the impact be maximized?

It will be important to learn more about the attraction of online communities for educators. What drives or motivates people to join and stay involved in an online community of practice? What strategies are effective in increasing the numbers of educators who participate in online communities and the quality of their interactions? What kinds of *incentives* would draw more educators to online communities? Attending to questions that pertain to attitudes and values of different educator populations will be an important area of inquiry for the field.

Elaboration of research needs will be available soon in Potential Community Research Questions & Methodologies, a brief that will be posted on the COCP website.

Practical Guidance for Online Communities of Practice

The vision of connected teaching in the National Education Technology Plan 2010, the demonstrated benefits of online communities of practice and collaborative learning from research, and the corollaries with established community learning practices set the stage for practical guidance for *real* online communities.

Findings from the literature and lessons learned from practice—coupled with mature, accessible technologies—should be used to broaden, strengthen, and connect online communities of practice. While research and professional wisdom continue to evolve, enough is known *now* about the state of the field to inform efforts to develop or improve online communities for educators. In addition to a thorough review of research on online communities in education (much of it identified and discussed in Booth, 2011) and lessons from practice, this report is informed by additional inquiry, including:

- A research review of online communities in other industries
- Review of notable education communities and development of descriptions of their core qualities
- Detailed comparative analyses of the features of a representative sample of the education communities explored
- Identification of trends in online communities outside of education

This body of work is the foundation for the information and practical guidance on online communities that follows. As the investigation into online communities continues, this practical guidance will be refined and expanded and design principles for effective online communities will be developed. To date, this information and practical guidance represents the best thinking on online communities in education in these areas, which are the topics of this section:

- Core qualities of notable online communities of practice
- Current and aspirational roles and responsibilities
- Community technology matters
- Metrics for evaluating the impact
- The balance between guidance and uncertainty

Core Qualities of Notable Online Communities of Practice

Review of research and practical experience in the field conducted to date for this project suggests consensus that several core qualities are fundamental to the success of notable online communities:

- A clear purpose and collective identity
- Effective leadership and moderation
- Clear policies, practices, and other methods to instill trust
- Sociability and social presence
- Organic growth, dynamism, and innovation
- Communication and outreach
- Integration with a larger professional ecology

These core qualities—and practical guidance for community developers—are discussed below.

Establish a Clear Purpose and Collective Identity

Notable online communities have a clear purpose that suits the needs of a well-defined targeted audience. Short-, intermediate-, and long-term desired outcomes of the community are directly tied to the purpose—and are clearly positioned to participants in this way (see, e.g., Carr & Chambers, 2006; Jones & Preece, 2006). Because the community understands their needs, people feel that participation is essential—and, in fact, like constructivist lessons, many strong communities are designed to *demand* a certain level of participation, require a threshold of personal investment, and, arguably, even designed to fail without it.

Notable online communities also establish a collective identity (e.g., Gray, 2004). They often have a distinctive style of interaction and a characteristic look and feel, a “voice” or “personality” (Grunwald Associates LLC & Cotyledon Productions, 1998, 2002, 2010).

Focus on Purpose—and Purpose-driven Interactions

With the plethora of online communities, community developers should take a good look at the landscape and analyze other communities carefully to determine the best ways to create or add unique value to what already exists. It is worth asking the question: Should we create our own, or team up, even become part of someone else's offering? It is also worth determining the primary (typically one to three) types of interactions that will most advance the community's purpose, such as discussion boards, collaborative spaces, or mobile applications, and focus on these—subordinating and even excluding others, at least at first.

At the same time, notable communities typically provide a variety of ways for members to participate based on their style and inclination (Wenger, White, & Smith, 2009), all tied to purpose in complementary ways. This is a principle of inclusion that successful consumer communities have long recognized.

Cultivate Effective Leadership and Moderation

Many studies cite the importance of effective community leadership (see, e.g., Babinski, Jones, & DeWert, 2001; Farooq, Schank, Harris, Fusco, & Schlager, 2007; Gareis & Nussbaum-Beach, 2007). Notable online communities have leaders who are well connected and attuned to the group. They have a strong passion for the community's goals (Bourhis, Dubé, & Jacob, 2005) and some expertise in at least part of the domain (Gray, 2004; Jones & Preece, 2006). They have excellent communications skills and, in some cases, prior experience at moderating groups and the capability to build alliances both within and outside the community (Booth, 2011). "Creativity and intuition" (Gairín-Sallán, Rodríguez-Gómez, & Armengol-Asparó, 2010) and the ability to "develop innovative ideas to stimulate and encourage participation" (Bourhis et al., 2005) are important personal factors for effective leadership and moderation as well.

Effective leadership is *active* leadership. Strong moderators regularly start and "seed" discussions to model participation—often providing valuable amplifications, echoes, and syntheses to the dialogue. In particular, and to the extent possible, they ensure that most queries in their communities receive a response—either directly or, as the community grows, by creating a culture of responsiveness—which is key to establishing other important qualities, such as trust and sociability.

This is a challenge in many online communities, including education communities, where a third or more of queries appear to go unaddressed in more than half of forums. This is especially relevant in education, given that educators join communities to overcome disconnectedness and isolation or to get a quick response to their questions. Often underappreciated is the important role strong leaders play

behind the scenes, working one-on-one with individual members to elicit and sustain participation, as well as their contributions to the rhythm and cadence of the community activity (Booth, 2011; Institute for Learning Innovation & Grunwald Associates LLC, 2011).

Notable online communities empower—and even recruit—members to take on a variety of leadership roles and provide them with clear pathways for doing so, developing collective moderation/leadership organizations and approaches as the community grows. Participation, contribution, and leadership roles often are formally or informally recognized in a variety of ways in successful online communities. (Roles, responsibilities, and recognition systems in online communities are detailed below.)

Content Serves a Purpose

The role of content in notable online communities varies with the group's purpose. Content might serve as a resource, a conversation piece, or product of community activity. In recent years, there has been growing appreciation of the potential of content, such as videos and case studies, to provide “campfires” that groups can gather around, especially front-line practitioners and groups that normally don't interact with one another (see, e.g., Institute for Learning Innovation & Grunwald Associates LLC, 2011).

As a result, and due to more general Web 2.0 pressures, education providers increasingly are making all of their content open to comment and developing platforms specifically for this purpose. In some communities, paid staff refines community-generated content, thus strengthening its value to community members and its impact on the domain and field. In general, as the volume of (shared) community content grows, the development of (cost-) effective Implement Clear Policies, Practices, and Other Methods to Instill Trust

A sense of trust is paramount in online communities. People need to feel comfortable admitting what they don't know, asking for help, sharing their thoughts, exposing their practice as a work in progress, and taking risks—often in full view of a large group. The “lack of face-to-face contact and visual cues,” as well as such aural clues as tone and inflection and uncertainties about the true identities of community members, all can make cultivating trust a challenge in virtual communities (Ridings, Gefen, & Arinze, 2002). “In the virtual setting, the sense of social distance and the lack of social cues make it hard for people to identify with each other and to assess mutual ability, integrity, and benevolence” (Young & Tseng, 2008). On the other hand, as some online research suggests (see, e.g., Davies & Graff, 2005), this same distance and absence of non-textual social clues could make some people, who might

be quiet and reserved in face-to-face social settings, feel safe to speak up in online conversations.

Notable online communities generate trust by implementing clear and effective guidelines for participation and other governance structures and policies (Beenen et al., 2004; Wu, Chen, & Chung, 2009). For example, using a screening and approval process can provide an important level of reassurance for many educators about the credibility of other members (Booth, 2011). However, rigorous registration can create administrative burdens and erect barriers to achieving critical mass.

Many online communities balance these competing tensions by providing a continuum of public to private registration options. For example, many admit new members with a fairly open registration, but allow community members (ideally via a moderated or managed process) to create closed groups within the community. Users also are often given some control over who can see particular elements of their member profiles and other personal pages.

Reducing Barriers and Adding Benefits With Persistent Profiles

Registration itself presents a barrier to greater educator involvement in online communities. Currently, educators have to enter essentially the same information each time they join a new community and update it in multiple places as their interests and experiences change. Enabling educators to create a “persistent” profile that they could use, customize, and build upon from community to community would be a welcome improvement.

Persistent profiles also could record “collaboration trails” where educators could share selectively to represent their activity throughout their personal learning networks to other members of the communities in which they participate. Such records of distributed participation could provide new opportunities for recognition and incentives, such as through badges or professional development credit, and could support crafting more reflective and competency-based documentation of professional quality, such as teaching or administrative portfolios.

In addition, just as leading e-commerce sites recommend products based on past purchases and browsing history, a persistent profile system might recommend new communities with content and activities that educators might find useful. For more on persistent profiles and other new infrastructure to support educators connecting online, see the Ideas section of this project’s site at edcosp.org/ideas/.

Support Sociability and Social Presence

Notable online communities emphasize the social dimensions of learning—the actions and activities of participants. As an initial condition, sociability can be cultivated by starting a community with a known critical mass of active or core users that can sustain it until it grows (Grunwald Associates LLC & Cotyledon Productions, 2002). Once launched, community responsiveness—making sure that questions are answered and contributions elicit responses—is key to sociability and to building *trust* as well (Ridings et al., 2002).

Notable online communities support social presence in a number of ways:

- **Networking functionality** (e.g., automated connection finders such as LinkedIn’s “People You May Know” feature, the ability to “follow” or “subscribe to” other users, and creative ways for users to leverage their networks, as LinkedIn offers)
- **Acknowledgment functionality** (e.g., simple ways for members to acknowledge one another, such as “like” meters on forum posts)
- **Presence indicators** (once the community has reached critical mass—e.g., how many people belong to the community, are on the site, or are on the same page as the participant)
- **Reputation systems, badges, and integrated member profiles** that help users “put a virtual face” to the other community members with whom they interact
- **Support for meaningful interactions**, such as designating individuals to regularly perform roles related to social presence (see Roles & Responsibilities below), and developing supportive norms, such as acknowledging and building on previous contributors in discussions

Recognizing and Rewarding Individual and Team Contributors

Content tagging, ranking/rating of content, and tracking the reputation of its author(s), all relatively uncommon in education communities, can enhance group productivity and ownership of content. Directly or indirectly, all of these approaches are impacted by the extent to which communities recognize and reward individual contributors. Outside education, this takes many forms:

- Some sites prominently promote top contributors, highlight the profiles of “featured members,” and even conduct and publish celebrity or news-style interviews with them.
- Many sites provide “badges” or titles associated with leading users everywhere in the community.
- Some sites work with their funders to provide sponsored benefits ([Discovery Educator Network’s Star Educator program](#) and the [National Science Teachers Association’s partnership with uBoost](#) are examples of this in education) or support incorporation of users’ status on CVs or résumés in some way.
- Some sites give top contributors special levels of access to functionality, areas of the site, or site owners (this might be access to association leadership in the case of educational organizations).

Team-based recognition approaches (e.g., by school or district) or levels that are universally attainable may work better with educators than zero-sum systems that single out some members at the expense of others. In general, approaches that speak strongly to educators’ specific aspirations seem likely to be successful. In any case, an almost universal experience is that what may seem to be fairly minor forms of acknowledgment often have surprisingly large effects.

Embrace Organic Growth, Dynamism, and Innovation

Business developers of online communities have identified several distinct qualities of successful communities, which could inform development of educator communities (Grunwald Associates LLC & Cotyledon Productions, 1998, 2002, 2010):

- **Organic growth.** Online communities should reflect the natural growth of the group in terms of its critical mass and sophistication. Many of the best online communities start as small and simple ventures. Growth in basic units (e.g., the number of boards, blogs, groups), the topics the community covers, and new features and functions are undertaken carefully but responsively, driven by growth of the group and determined by the community’s demands—much more bottom-up than top-down. Many online communities suffer because they offer more opportunities than their participants can take in or

comfortably address, dissipating core interactions in the process (see About Overbuilding, below).

- **Dynamism.** At the same time, successful online communities refresh their sites with rapid turnover of featured content, including topics, events, promoted contributions, challenges or contests, on the home page and, in some cases, elsewhere on the site as well. This dynamism gives people a reason to keep coming back. For organizations with limited resources, highlighting member contributions (rather than only what the organization itself produces), giving members who have earned trust specific editorial responsibilities, taking longer pieces or collections of pieces and serializing them, and creating continually relevant content that can be resurfaced and re-promoted periodically are all strategies that can help ensure a dynamic flow.
- **Innovation.** Savvy developers also recognize the disproportionate sway of “online influencers,” people who by nature and to maintain their status are constantly seeking out “what’s new.” Online influencers often are key drivers of online community use. (For more on influencers, see e.g., the George Lucas Educational Foundation & Grunwald Associates LLC, 2005; Li & Bernoff, 2008). To retain online influencers, successful communities often place a premium on innovation. A steady stream of small innovations such as creative content, small interactives, new feature twists, and the like, all of which make for easy e-mail notices, can be as effective as major, groundbreaking developments for many communities, at least in the short term.

Attract, Secure, and Retain Members with Communication and Outreach

Nearly all notable communities, in education and in other industries, reach out to participants and potential participants with regular, targeted communications. These communities use multiple means, including communications, marketing, and media work, to recruit new members and make the work of the community visible to a larger public. They share accounts of activity with other online communities and organizations within the domain to look for opportunities for collaboration. They understand that site registration is only the first step in securing and retaining the loyalties of their members, a process that never really ends. Outreach efforts include:

- E-newsletters, generated editorially or as automated digests
- Notifications and alerts, such as of new postings in a topical thread of interest
- RSS feeds
- Sharing functionality, such as toolsets that facilitate content sharing via e-mail, Facebook, LinkedIn, Digg, or other social media sites, as well as member-to-member outreach that allows people to subscribe to or follow others’ activities

- Outposts on major social media sites, such as dedicated Facebook or LinkedIn groups, Twitter streams, or YouTube channels
- Partnerships with other organizations in the field
- “Purposeful (targeted) recruiting” of new members (Jones & Preece, 2006)
- “Evangelist” programs (encouraging committed community members to convince others to join), viral marketing (the development and deployment simple games or other interactive elements, multimedia clips, and short provocative articles all designed to be passed along, primarily through social networks, to increase awareness or memberships), and syndication (making content available to multiple other communities or sites)
- Communications with offline communities

In general, online communities for educators have significant opportunities to expand outreach. Currently, for example, education community participants often have to “opt in,” or find and sign up for, communications vehicles, rather than receiving them by default if they don’t opt out when they register. While a clear opportunity to opt out should be provided, it also should be easier for participants to receive communications if they want them. Outreach for educators also seems to be less frequent and takes fewer forms than it could. The relatively rare online partnerships between education organizations/communities could be strengthened as well.

Organic, Dynamic, Innovative Action: Members Make a Community Their Own

The Latin root of education, *educare*, means “to lead out.” A classic milestone of community development occurs when its users “take over” the community in some critical way and “make it theirs.”

A remarkable and ongoing example of this is occurring in the popular [English Companion Ning](#), where members of the community are spontaneously organizing multisection, real-time “webstitutes” as a new model for online professional development. The first webstitute, “English 2.0,” held in 2010, offered keynote addresses and multiple breakout sessions throughout a two-day period. The founder of another prominent online community, [Classroom 2.0](#), provided logistical and technical support. A second webstitute, “Work With Me,” was held early in 2011.

Integrate Online Communities Into a Larger Professional Ecology

Notable online communities do not exist in a vacuum. Their activities and interactions are *well integrated* with the online content, services, and larger goals and activities of the sponsoring organization(s), such as key initiatives, partnerships, or events. Equally important, many online communities connect to face-to-face opportunities for networking, learning, and collaboration, such as meetings, workshops, or

conferences. Online communities of practice also should be integrated into a larger ecology of online community work, online services, and social media platforms that relate to their domains (areas of shared interest). Since the early days of community building, when integration simply meant weaving community content and interactivity throughout the online offerings of the community sponsors, level of integration often separates leaders in online sectors from other participants. In a medium that is increasingly diffuse and overwhelming, integration is likely to assume greater importance in the future.

Integration and Education Leader Communities

Groups aimed at education leaders have led some of the best integration efforts to date. [Edutopia](#) has made a notable effort to solve the challenge of balancing groups and core discussion by integrating and cross-posting group content throughout its content areas. [ASCD](#) does an admirable job of collecting and synthesizing information from a number of different education sites every day. Both groups do well at integrating social media into their offerings (and integrating their social media satellites with one another), and both have made significant efforts to mobilize resources thematically and around offline events.

Other leadership groups are showing the way as well. The [Alabama Best Practices Center](#), for example, shows off some of the possibilities and promise that blended online and offline offerings hold, with local offline conversations and events feeding into online success stories and blog-based discussions. The [National Association of Elementary School Principals](#) offers an online mentor center where trained and experienced principals support aspiring and newly minted education leaders, as well as providing monthly outreach to parents, among other notable features.

Integrating Online Communities of Practice at the School Building Level

Is an online community of practice superfluous at the school building level, where educators work in a face-to-face environment? Perhaps not. Online communities at the building level hold great promise on their own merits, and for the online community ecology as a whole, potentially providing the strongest anchors to practice.

Many educators actually feel disconnected from their colleagues even in their own buildings. Groups of educators who see each other every day could benefit from many-to-many asynchronous communications and resource sharing that a local online community can support.

Before starting a local online community, school leaders will want to think carefully about whether there is in-house capacity to sustain educators' engagement. School-level online communities could suffer from low critical mass or a lack of experienced moderation. On the other hand, many early online community moderators inside and outside of education were teachers, who often bring an ideal mix of communication skills and participatory group management talents—honed from experience in classrooms—to online moderation. Thus, schools may discover great leaders for online communities right in their buildings.

School leaders also may want to consider supporting their teachers' and other educators' participation in district, state, or national online communities (e.g., by offering them professional development credit or "sabbaticals" from other responsibilities). Ideally, participation would occur in contexts in which educators can develop skills they can apply in their schools. Again, ideal leaders for these online educator communities—and for larger, mixed communities of educators, parents, students, and other local stakeholders envisioned in the National Education Technology Plan 2010 (p. vii)—likely will emerge from local school buildings.

Going forward, the structure and support of building-level communities, along with and blended (online and offline) communities, will be a key area of research for the field.

Additional research and details on core qualities and how they manifest themselves in education (and other) communities today, will be provided soon in two briefs, *Online Communities for Educators: Guidelines for Planning and Implementation* and *Online Communities: The State of Practice*, which will be posted on the COCP website.

Current and Aspirational Roles and Responsibilities

Members of online communities take on a variety of formal and informal roles, some of which are listed under A Broad Spectrum of Roles below. Giving individual members unique, defined roles—or providing pathways to these roles—has proved to facilitate knowledge, sharing, and participation (Beenen et al., 2004; Lin, Lin, & Huang, 2008).

In many education communities today, there are only three roles: reader, writer, and moderator. Educators who aren't comfortable writing or policing/managing others often are left on the sidelines. And treating writers or moderators as undifferentiated roles can leave opportunities for greater participation by the wayside as well. At the same time, it is important for communities to understand the needs of their readers, not just their most active users—even as they make every effort to encourage deeper forms of participation, roles, and responsibilities to which educators can aspire.

Indeed, group members' roles often evolve over time. Preece & Schneiderman (2009) identify a typical progression from “reader” to “contributor” to “collaborator” to “leader.” This progression often involves a significant narrowing of participation at each step (Porter, 2008), and users can take on supported, multiple roles, or move into and out of many roles, depending on their motivation and interest (Preece & Schneiderman, 2009). However, it is entirely appropriate for many, if not most, community members to be readers only in many communities.

Factors that influence crossing the key threshold from reader to contributor include “a sense of belonging, a welcoming environment, safety, support for newcomers, and contacts to ask questions” as well as “ease of making small contributions, visibility for their contributions, recognition of quality and quantity of contributions, [and] rewards” (Preece & Schneiderman, 2009).

As communities move from isolation to connection, new roles likely will emerge and current roles will change, each requiring more rigorous identification and classification and further study and support.

A Broad Spectrum of Roles

Healthy online communities welcome and recognize a broad spectrum of nuanced roles (see, e.g., Booth, 2011; Bourhis et al., 2005; Forrester Research, 2010; Grunwald Associates LLC, 2003, 2007). Potential roles include:

- **Cybrarians** and **collectors** help manage and add to the community's content collections by organizing, tagging, finding and uploading files, bookmarks, and other resources.
- **(Sub-) domain experts** establish themselves or are anointed as “go-to” or “last word” experts on particular topics.
- **Thought leaders** lend big-picture perspectives and visions throughout the community; **pot stirrers** are relied on to deliberately provoke and extend discussions.
- **Critics, evaluators,** and **raters** regularly rate content and other participants and avidly participate in beta tests and site surveys. Some also write product reviews or comment on blog posts and official content.
- **Event coordinators** and **hosts** set up and run real-time (online and offline) activities for the community.
- **Mentors, support providers,** and **greeters** primarily help new members of the community and, in the case of mentors, new members of the field. Support providers and greeters (who welcome new users) become more important as the community grows in size and complexity.
- **Village elders** and **griots** are storytellers and keepers of their community's institutional memory. Communities often turn to these members to help resolve difficult community issues.
- **Evangelists** spread the word about the community by a variety of means. **Networkers** create connections between community members, often initially through their efforts to build their own networks, sometimes recruiting new community members in the process.
- **Cops** report and/or call members on inappropriate behavior. **Peacekeepers** sense when discussions are growing problematic and try to steer them to safer ground, often mediating behind the scenes as well. Both groups support moderators in these functions.
- **Members** or **citizens** potentially include all community members in sites that regularly use poll, surveys, or other mechanisms that allow community members to help determine new community directions or official positions and actions.

Community Technology Matters

Technology is a critical tool, but not the driver, of notable online communities. Above all, technology should support *accessibility* and *usability* (Ardichvili, 2008; Barab, MaKinster, & Scheckler, 2003; Farooq et al., 2007; Jones & Preece, 2006).

Accessibility means that all users can access all services and content. Usability means that people can access services and content intuitively and efficiently. Online communities should not require special technical capabilities or training that many educators do not have. Communities should offer alternative means of participation for people with different capabilities, styles, or preferences for interaction, all tightly and complementarily focused on the primary purpose or goals.

Basic functions should be familiar and intuitive—there are plenty of other opportunities in community development and management to get creative—and all functionality should be tested with a number of community members or prospective members as part of a pilot phase before launch. For this reason, new community developers also should strongly consider launching on a well known, well-tested, multi-purpose community platform rather than starting with a custom solution.

Typically, technology is viewed in terms of **tools** and **platforms**:

- **Tools** support specific community activities (e.g., a discussion board) or provide bridges between types of activities.
- **Platforms** are integrated collections or packages of community tools and technology (e.g., Drupal, Ning).

In recent years, it's become clear that two other levels need to be carefully considered (Wenger, White, Smith, & Rowe, 2005):

- **Configurations**, the full set of technologies that members use for community activity (e.g., a combination of Facebook, LinkedIn, instant messaging, e-mail, and phone)
- **Features**, the finer grained elements of community tools or platforms that make them usable and, in particular, differentiate one offering from another

Recent advances in technology make it easier to link tools and platforms together and to share and coordinate content and activity across them. But this requires organizational as well as technical coordination. For most organizations, it's best to start with one multipurpose platform that meets core needs, while making the platform's ability to interoperate with other platforms and tools a key factor in deciding which platform to adopt.

From Small to Massive Groups: Potential Models for Online Collaboration

Online communities outside of education provide a variety of potential models for collaboration:

- There are extreme examples of **small-group collaboration** like [Pandora Internet Radio](#), in which a core group of musicians have catalogued hundreds of thousands of songs along hundreds of attributes to enable users to easily create a remarkable array of radio stations.
- There are **platform-based “bazaars”** like [Scratch](#), [Sodaplay](#), and [Many Eyes](#) that allow people to use specialized software to create, share, and “remix” each other’s games, visualizations, and other creations.
- For **large-scale projects** that require many educators to make small, well-defined contributions, *citizen science* provides a variety of approaches (a nice aggregation can be found at [Science for Citizens](#)).
- When **more complex contributions** are required, *crowdsourcing* services, such as [Innovation Exchange](#), [Crowdspring](#), and [Genius Rocket](#), which outsource work to large groups or communities, may offer guidance. Crowdsourcing also can be used for simple, repetitive community tasks like content rating and tagging (see, e.g., [CrowdCloud](#), [Mechanical Turk](#), [Image Labeler](#)).
- Services like [Photosynth](#), [Walk, Jog, Run](#), and [lastFM](#) illustrate the variety of forms **group data collection** and display can take; even [user profiles](#) can generate collaborative activity. At the zenith are **long-term, massive, complex collaborations** like the building of the Internet itself—*open-source* communities like [Drupal](#) and [WordPress](#), and “massively multiplayer” content collaborations like [Second Life](#) and, of course, [Wikipedia](#), where the potential model is less the technology or end product than the [process and organization](#) behind the product.

More detail and examples will be provided in *Online Communities: The State of Practice*, a brief that will be available on the COCP website.

Community Technologies, Purposes, and Orientations

There are a wide and growing variety of community technologies in use today. Table 1, *A Sample of Community Technologies, Descriptions, and Functions*, details and describes a sampling of the most common and emerging forms.

Ideally, the best tools and features for any particular community are determined by its *orientation*, or *style of engagement*. Notable online communities typically have a primary orientation that is related to their purposes and goals and to the preferences of current and intended participants (Wenger et al., 2009). Some communities are hybrids with multiple orientations, although it has often proven most effective to start with one primary style and grow. Typical orientations, adapted from Wenger, include:

Content-oriented

- Content—capturing, publishing, and organizing what the community learns and knows
- Access to experts—learning from experienced practitioners
- Community cultivation—active curation of content, mining it for valuable information and repackaging it in easily accessible forms

Relationship-oriented

- Open-ended conversations—conversations without a specific goal
- Relationships—getting to know each other, building and maintaining interactions
- Individual participation—enabling members to craft their own experiences in the community

Task-oriented

- Meetings—in-person or online gatherings with an agenda
- Problem solving—work on clear, specific missions beyond a single project
- Projects—interrelated tasks with specific outcomes or products

Because orientations often drive decisions about roles and policy as well as technology features, it's important to choose or identify which orientation(s) are central to the community. Table 2, Matching Sample Community Technologies and Orientations, shows how different technologies are more or less suitable to different orientations.

Table 1. A Sample of Community Technologies, Descriptions, and Functions

Design Element	Description and Sample Function(s)
Moderated asynchronous discussion boards	Begun with a topic or question introduced by a moderator or a participant and responded to by members of the community. Enables community members to provide mutual support through answering questions, sharing resources, and debating controversial issues. Often particularly valuable when starting an online COP by engaging members, providing information about their needs, and enabling their contributions without requiring all participants to be present at the same time.
Blogs	Typically, moderated forums with a single voice (or group of voices) initiating each discussion with a detailed, often impassioned statement about an issue; they also can be great vehicles to follow the unfolding of a project or story over time. Bloggers tend to offer strong opinions and seek to develop groups of followers, analogous to a newspaper editorial writer or TV commentator (as a result, blogging can work particularly well in communities of education leaders).
Microblogs, hashtags	E.g., Twitter. Essentially broadcast, asynchronous instant messaging, opening up the IM concept and making it more of a public community conversation that, in active communities, can be pushed and advanced in nearly real time. Hashtags enable Twitter users to quickly find “dialogs” of interest and access prior messages. Can support “on-the-go” involvement via cell phones and other mobile devices.
Member directories, profiles	Vehicles for users to find and learn about each other, form bonds, and communicate (semi-) publicly (e.g., via personal comment walls, news feeds) or privately. Particularly effective when users can identify colleagues with similar roles or others with specific areas of expertise. Facebook, MySpace, and LinkedIn all started out as member directories and then added additional COP functions.
Webinars	Online presentations on specific topics by one or more experts, using online conferencing tools (e.g., Wimba and Elluminate, WebEx) and/or video conferencing. Conveys information and enables synchronous Q & A and other interactions, similar to a face-to-face presentation session, with the possible addition of follow-up discussion over time.
Polls, surveys, ratings	Tools used to provide a quick sense of the overall views or interests of community members and their ratings of resources and activities. Polls, surveys, and (content) ratings provide simple, anonymous ways for users to contribute to communities, often providing a first step toward greater participation.
Resource libraries with user tagging	A wide variety of platforms enable community members to contribute resources, ranging from recommended URLs to original text, audio, and video files. Increasingly central to online community building is providing members with the tools, prompts, and knowledge to become core content providers. User tagging helps organize these burgeoning resource repositories.
Wikis, other collaborative spaces	Wikis enable the production of highly structured, usable community-based output that can be updated on an ongoing basis. Other collaborative production forms are emerging online, to support collaborative art, music, game, and virtual world creation.
Mobile applications	Mobile-optimized versions of communities facilitate on-the-go use. Through geo-tagging and other mechanisms (see, e.g., Fate in Your Hands), mobile is increasingly blurring and blending the physical and virtual worlds and associated communities.

Additional detail and more community design elements will be part of the Online Communities for Educators: Guidelines for Planning and Implementation, a brief available on the COCP website.

Table 2. Matching Sample Community Technologies and Orientations

	Community Orientations								
	Content-Oriented			Relationship-Oriented			Task-Oriented		
	Content	Community Cultivation	Access to Expertise	Open-Ended Conversations	Relationships	Individual Participation	Meeting Support	Problem solving*	Project Infrastructure
Key ▲ Important ● Nice to have									
Content management and file repositories (incl. media)	▲	▲	●	●	●	▲	▲	▲	▲
Discussions	●	●	●	▲	●	▲	●	●	●
Blogs	●	▲	▲	●	●	●	●	●	●
Microblogging	●	▲	▲	●	●	●	●	●	–
Wikis and other collaborative authoring tools	▲	●	–	–	–	–	●	●	▲
Webinar services	●	▲	●	●	▲	●	▲	▲	▲
Social bookmarking	●	●	●	–	●	●	–	●	–
User ratings and popular content	▲	▲	●	●	●	▲	●	▲	●
Polls and surveys	●	▲	●	–	●	●	▲	●	●
Event calendar	●	●	●	●	●	●	▲	●	▲
Task management tools	●	●	–	–	–	–	●	●	▲
Badges, reward and reputation management systems	●	▲	▲	▲	●	▲	–	▲	–
Social network satellites	▲	●	▲	▲	▲	●	●	▲	●
Public and password-protected areas	●	▲	●	●	▲	●	▲	▲	▲
APIs	●	▲	●	●	●	●	●	●	–
Centralized accounts and login	●	▲	●	●	●	●	–	▲	●

Adapted from Wenger et al., 2002. Communities do not need to start with all “essential” elements. For a more detailed version of this matrix that includes additional functionality, see [Technology for Online Communities](#), a brief available online.

NOTES: “Problem solving” is “context-serving” in Wenger’s taxonomy. This table does not include such community technologies as member profiles, user commenting, notifications, and metrics tools that generally are common and recommended across all styles of engagement.

About Overbuilding

A smart strategy for developing an online community of practice for educators is to start simply. Here is some specific advice on this point, culled from notable communities of practice:

- **Start with a manageable plan.** Build from a primary goal and interactions and add capacity as participants, styles of engagement, activity, and content grow.
- **Focus the energy of the community.** Too many forums, groups, activities, and topics, for example, can be overwhelming to participants.
- **Design all aspects of the community to complement one another rather than compete.** For example, if the community uses forums, groups, *and* blogs, determine distinct roles for each.
- **Simplify the functionality of technology.** Too many bells and whistles can decrease the usability of the technology as well as dissipate core interactions.

Everything doesn't have to be in place on day one.

Metrics to Evaluate the Impact

Tracking metrics—measures of a community's performance and success that range in sophistication from “number of visits per month” to scientifically valid tests of impact on practice—can help community members and sponsors *objectively* understand how well their communities are working to meet community purposes and needs. They provide an invaluable feedback loop to improve community functions as well as evidence of efficacy in a world where both public and private funding increasingly depends on such evidence.

Why Metrics?

Solid evaluation and metric analysis can allow community managers to:

- **Determine the basic health** of their communities, getting beyond impressions, both positive and negative, that aren't fully accurate or complete
- Learn what **parts** of their communities are **over- and underperforming**, which can lead to **more effective and efficient use of community resources** (for managers and members alike)
- Learn how to **better meet the needs of different types of users** and, in the process, how to attract and retain more of them

- Track and report **what is happening** to their communities **over time**, demonstrating objectively measured growth and other positive changes or catching negative trends before they accelerate
- In many cases, **compare their communities to others** reaching out to the same audiences, help **identify and learn from communities performing at higher levels**, and/or **generate positive news** (in cases where comparisons are favorable)
- In some cases, demonstrate (and even quantify) the **impact of the community** on other communities, on attitudes, on practice, and on student learning
- In general, **make a better objective case to funders and sponsors**, in a world that is increasingly driven by return on investment (ROI), even for nonprofits

From a metrics perspective, online communities provide extraordinarily rich sources of potential data. Like all online offerings, there are available site analytics (e.g., page views, unique users, bounce rates, and so on) that can be captured and analyzed. There's also a great deal of potential to traditional evaluation vehicles such as online surveys, online focus groups, and individual interviews, all of which should be considered in complementary ways.

By nature, online communities also uniquely provide layer after layer of information about participants' actions, opinions, behavior, learning, motives, hopes, and fears, with new data generated daily, often recorded and archived for months or years. All of this is potentially valuable to understanding a community's dynamics and provide at least a proxy for its potential impact. Unlike online surveys or focus groups, much online community data is about actual online (and sometimes offline) behavior over time—not just what people self-report they do or claim to feel on a snapshot basis. What's more, a great deal of the data that online communities generate is publicly available, meaning that conclusions drawn from it can be relatively easy to verify by others and that community managers can often easily compare how they're doing with other communities in or out of their fields.

On the flip side, participants often are more circumspect about what they will say in an online community (versus an anonymous online survey). Furthermore, overgeneralizing from some forms of community data can be risky. Only a small percentage of community members typically post public content, and these members tend to be similar in their values and attitudes across communities, a risk shared with some online community surveys and focus groups as well.

Choice of metrics should reflect community purpose and style of engagement. Thus, for example, a highly specialized community creating knowledge products for state-level decision makers doesn't need to measure itself by its number of members. Overall, at this point, community metrics, especially metrics derived from community activity and content, are relatively new and not yet well defined. Fortunately, there is

a set of metrics about basic community health and momentum that are, generally, relatively easy to collect:

- *Basic metrics* include measures such as the number of unique visitors, registered users, and quantities of user content generated (e.g., the total number of topical threads, blog postings, video uploads, and so on).
- *Momentum metrics* focus more on trends related to new content (e.g., how many replies the average new topic gets) or activity rates per member (e.g., the number of blog posts per member).
- Simple *connectedness/cohesion metrics* can be key measures of the current and future health of many communities (e.g., the percentage of forum postings that get no responses, the average number of “friends” or “colleagues” members have in their profiles, the percentage of members who have been members for more than specific time periods and who have no “friends” or “colleagues”). Ambitious community managers can potentially move from this type of simple metric to more complex *social network analysis*.

Beyond these measures, there is the potential for many more. For example, as qualities of successful communities are codified, it should be possible to develop simple metrics that any community manager can use to at least “take the temperature” on desirable community qualities, such as *trust* and *user ownership*, as well as the general *quality* of dialogue and content created. Some quality measures will become increasingly good proxies for the ultimate and most difficult measures, those of *impact* on attitudes, practice, and student learning—particularly as impact studies are shared and their results are compared against the qualities of the communities that generated them.

A fuller list and more detailed information on potential tracking metrics will be provided in *Community Metrics*, a brief that will soon be available on the COCP website.

Two Simple Measures of Quality and Impact

In the short term, one simple measure of quality that can be applied to many communities is *signal-to-noise ratio*. For communities of practice, this means measuring the proportion of postings and other forms of user content that are “on topic” either in terms of the purpose of the community or the section where they are posted.

Similarly, a simple measure of impact that community managers can track is *dissemination impact*, using internal analytics and search engines to track how many other sites are linking to or republishing their community’s content. As it happens, one of the best ways to increase dissemination impact is to reach out to—and link to—other sites, which can lead to the development of a more connected ecosystem of educational communities as well.

Going forward, a challenge for the field will be to develop benchmarks for all key metrics. In the interim, community managers easily can track changes in their metrics over time and, in many cases, compare their metrics to those of similar communities. Some metrics, such as the signal-to-noise ratio (discussed above in Two Simple Measures of Quality and Impact) require simple content analysis. These and other metrics may seem daunting due to the total quantity of content involved. Usually, though, only small periodic samples of total activity are necessary to provide a fairly accurate picture of what is happening. At the same time, content analysis requires special attention to member privacy, particularly in closed communities.

Lessons From a Popular Online Consumer Community

When it comes to seeking benchmarks for best practices going forward, education communities could do worse than looking at veteran consumer leaders like [Epicurious](#), [Ravelry](#), or [The Motley Fool](#).

On Epicurious, for example, content is thoroughly rated—and rating is widely used as an organizing principle. The service regularly and prominently polls its users as well. The site is tightly integrated with partner sites and social media, while significant effort has been made to give the offering its own style and voice (including the adaptation of standard nomenclature and functions to the audience).

Epicurious is well staffed and does an excellent job of outreach, including member-to-member connections via engaging categories such as “adventurous eaters” and “chocoholics.” It has had its own mobile app since April 2009 and, more recently, has entered the mobile social gaming arena. While most of these elements—and others (see, e.g., *Online Communities: The State of Practice*, a brief that will be available soon on the COCP website)—are present in small subsets of educational communities, the combination of them is not. But these elements are fairly standard in consumer sites, where it’s likely many educators are spending much of their online time. Thus, many educators are familiar with these features and capabilities—and they may want and expect to find them in online communities for educators as well.

Balancing Guidance and Community Tensions

A challenge in providing definitive guidance about online communities of practice is the number of tensions that exist within them in many areas, as shown in Table 3, *Community Tensions*. There is no single blueprint or model for successful online communities—and there may never be. Successful communities can break the rules of thumb and still enjoy strong member allegiance, value, and growth.

Table 3. Community Tensions

Leadership and Growth		
Strong top-down leadership	vs.	Bottom-up, organic growth
Breadth of functionality to attract the broadest cross-section of potential users	vs.	Organic growth, care against overbuilding
Addressing users' immediate needs	vs.	Moving members towards deeper collaboration
Content and Interactions		
Manageability of content	vs.	Diversity of expression (Ardichvilli, 2008)
Core communal interactions	vs.	More individual forms of expression (e.g., subgroups, blogs, profile walls, news feeds)
Addressing professional needs	vs.	Addressing personal needs
Standardization of expression	vs.	Diversity of expression (Ardichvilli, 2008)
Security/privacy	vs.	Openness/dissemination
Consensus/harmony	vs.	Conflict/debate
Participants		
New users	vs.	Experienced users
Birds of a feather	vs.	Diverse users

The reality is that there is a continuum of successful communities along many dimensions. For example, while clear purpose is important, there are thriving communities that did not start with a clear purpose or that have purposes that are very different than the ones with which they started. There are even heavily used communities that have don't appear to be guided by a strong hand—although they may have been at some stage in their development. A number of the most popular educator communities (e.g., [Teachers.net](#), [Proteacher.net](#), [AtoZTeacherStuff](#)) fit this description, as do many collectively moderated community offerings outside education (e.g., [Slashdot](#), [ePinions](#), and [Digg](#)).

Different qualities of communities can be important at different phases of development. Moreover, it's likely that successful approaches will differ for different groups, such as front-line educators vs. professionals at higher levels of educational organization, elementary vs. secondary educators, and educators in different subject areas. The research literature on online communities is still relatively new and developing and still limited in scope. Much remains to be learned.

Next Steps

Connected online Communities of practice—purposeful coordination of two or more communities—should be a goal for the education community. Cross-pollination of educators, activities, content, and technology could make professional learning and collaboration more productive, effective, and fun.

Taking the benefits of online communities to scale requires support for the field from education leaders and stakeholders, including education organizations, community developers, policymakers, and researchers. Together, it is possible to make online communities of practice more useful to educators in their everyday lives. Already, there are pockets of excellence on which to build. Here are some opportunities to broaden the impact now:

For Education Organizations

Explore

- **Join and participate** in online communities of practice and decide whether it makes sense to create one or partner with another organization to serve the needs of your group.
- **Take the measure** of your group's size, professional needs, and collaborative preferences to shape your community's purpose, interactions, content, and roles of your community of practice.

Implement and Scale Up

- **Establish policies and practices** that promote educator participation in online communities of practice, such as incentives and/or formal legitimation.
- **Establish policies and practices** that instill educators' trust, such as secure registration, clear and effective guidelines for participation, effective moderation, and responsiveness.
- **Develop policies and practices** that better define and protect educators' privacy and intellectual property rights.
- **Integrate** the workings of your online community as thoroughly as possible with all other aspects of your online and offline activities. Seek ways to partner and integrate your community with other education organizations and to boost outreach to members and prospective members alike.
- **Promote** participation in online communities of practice by schools, districts, states, educational organizations, and businesses.

- **Encourage** the development of local (sometimes face-to-face) communities of practice that are productively connected to regional and national online communities of practice.
- **Share lessons learned** (e.g., with other education organizations and, ultimately, with “repositories and distilleries” of community research inside and outside of education on online communities of practice).

For Researchers and Developers

Study and Share

- **Explore promising community approaches** that are working outside of education (e.g., social games, collaborative visualization tools, geo-social networking and other mobile applications, social studying and influence metering services, as well as crowdsourcing, citizen science, remixing bazaars, open-source collectives, and other forms of collaboration) and think about whether you could use them to engage educators or improve education.
- **Address infrastructure needs** (e.g., persistent profiles, personal learning network applications, content analysis tools, school/district learning profiles).
- **Conduct focused research** on online communities of practice to learn more about **educator participation** and **collaboration; community leadership, tensions, and metrics**; and **impacts** on educators’ practice and student learning.
- **Engage in design research** that supports practice while simultaneously advancing the body of knowledge about online communities of practice for educators.

In partnership with a wide range of educational organizations, the U.S. Department of Education will support the work of the field. The Connected Online Communities of Practice project will steward a scalable, sustainable ecology of online communities in education to improve teacher and leader effectiveness, enhance student learning, and increase productivity. Specifically, the project aims to:

- Increase the quality, accessibility, and connectedness of existing and emerging online communities of practice
- Create new online communities of practice where a demonstrated need exists and where their implementation can generate new understandings for the field
- Offer, through its publications, community features of its website, and its social media presence, technical assistance to organizers of online communities to help

them connect their work to that of others and support the coordination of content and interaction across and between community platforms and social networks

- Conduct and disseminate research on online communities of practice through this iterative report and associated briefs, which will be updated as the work continues

Online communities of practice are instrumental for advancing professional excellence and the excellence of the profession. Education was once in the vanguard of online development and participation and could be again. K–12 educators were distinctly overrepresented in the membership of early online services such as America Online (AOL). Many pioneering education services—such as AppleLink, Apple Classrooms of Tomorrow (ACOT), AT&T Learning Network, CNN Newsroom, McGraw-Hill Information Exchange (MIX), and NGS Kids Network—existed before most Americans knew what the Internet or an online service was.

Connecting and inspiring educators in online communities of practice, and leveraging powerful and engaging technology to take professional learning and collaboration to scale, is an exciting opportunity to recapture educators' leadership in innovative practices. This report offers key educator stakeholders meaningful ways to contribute to this opportunity.

References

- Annenberg Institute for School Reform. (2004). *Professional learning communities: Professional development strategies that improve instruction*. Providence, RI: Author. Retrieved March 6, 2011, from <http://www.annenberginstitute.org/pdf/proflearning.pdf>
- Ardichvili, A. (2008). Learning and knowledge sharing in online communities of practice: Motivators, barriers, and enablers. *Advances in Developing Human Resources, 10*(4), 541–554.
- Babinski, L. M., Jones, B. D., & DeWert, M. H. (2001). The roles of facilitators and peers in an online support community for first-year teachers. *Journal of Educational & Psychological Consultation, 12*(2), 151–169.
- Barab, S. A., MaKinster, J. G., & Scheckler, R. (2003). Designing system dualities: Characterizing a web-supported professional development community. *Information Society, 19*(3), 237–256.
- Beenen, G., Ling, K., Wang, X., Chang, K., Frankowski, D., Resnick, P., et al. (2004). *Using social psychology to motivate contributions to online communities*. Paper presented at the ACM Conference on Computer Supported Cooperative Work, Chicago, IL.
- Booth, S. (2009). Factors that facilitate or impede professional learning communities: A review of the literature. Unpublished paper.
- Booth, S. (2011). *Cultivating knowledge sharing and trust in online communities for teachers: A multiple-case study*. Doctoral dissertation. North Carolina State University, Raleigh.
- Bourhis, A., Dubé, L., & Jacob, R. (2005). The success of virtual communities of practice: The leadership factor. *The Electronic Journal of Knowledge Management, 3*(1), 23–34.
- Bransford, J.D., Brown, A. L., & Cocking, R. R. (Eds.). (2000). *How people learn: Brain, mind, experience, and school*. Committee on Developments in the Science of Learning and Committee on Learning Research and Educational Practice, Commission on Behavioral and Social Sciences and Education, National Research Council. Washington, DC: National Academy Press.
- Carr, N., & Chambers, D. P. (2006). Teacher professional learning in an online community: The experiences of the national quality schooling framework pilot project. *Technology, Pedagogy and Education, 15*(2), 143–157.
- Center for Comprehensive School Reform and Improvement. Professional Learning Communities. (2009). Retrieved March 6, 2011, from <http://www.centerforsri.org/plc/program.html>
- Chen, Y., Chen, N. S., & Tsai, C.-C. (2009). The use of online synchronous discussion for web-based professional development for teachers. *Computers & Education, 53*(4), 1155–1166.
- Darling-Hammond, L. (2010). *The flat world and education*. New York: Teachers College Press.
- Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher professional development in the United States and abroad*. Stanford University: National Staff Development Council.
- Davies, J., & Graff, M. (2005). Performance in e-learning: Online participation and student grades. *British Journal of Educational Technology, 36*(4), 657–663.
- Duncan-Howell, J. (2010). Teachers making connections: Online communities as a source of professional learning. *British Journal of Educational Technology, 41*(2), 324–340.
- Farooq, U., Schank, P., Harris, A., Fusco, J., & Schlager, M. (2007). Sustaining a community computing infrastructure for online teacher professional development: A case study of designing Tapped In. *Computer Supported Cooperative Work (CSCW), 16*(4), 397–429.
- Forrester Research. (2010). *Social technographics® defined 2010*. Cambridge, MA: Author. Retrieved March 1, 2011, from <http://www.forrester.com/empowered/ladder2010>
- Gairín-Sallán, J., Rodríguez-Gómez, D., & Armengol-Asparó, C. (2010). Who exactly is the moderator? A consideration of online knowledge management network moderation in educational organisations. *Computers & Education, 55*(1), 304–312.

- Gareis, C. R., & Nussbaum-Beach, S. (2007). Electronically mentoring to develop accomplished professional teachers. *Journal of Personnel Evaluation in Education*, 20(3), 227–246.
- George Lucas Educational Foundation & Grunwald Associates LLC. (2005). *Education influence & influencers: A market probe into the new dynamics of education*. San Rafael, CA, and Bethesda, MD: Authors. Retrieved March 1, 2011, from <http://grunwald.com/pdfs/LUCAS-White-Paper-GRUNWALD.pdf>
- Gray, B. (2004). Informal learning in an online community of practice. *Journal of Distance Education*, 19(1), 20–35.
- Grunwald Associates LLC (2003). *Children, families and the Internet*. Bethesda, MD: Author.
- Grunwald Associates LLC (2007). *Kids' social networking*. Bethesda, MD: Author.
- Grunwald Associates LLC & Cotyledon Productions. (1998, 2002, 2010). Qualities of successful communities: A comparative-analysis, business research and experience-based rubric used with Pearson, Scholastic, CPB, and Discovery, among others inside and outside education. Used with permission.
- Hew, K., & Hara, N. (2007). Empirical study of motivators and barriers of teacher online knowledge sharing. *Educational Technology Research & Development*, 55(6), 573–595.
- Hur, J. W., & Brush, T. A. (2009). Teacher participation in online communities: Why do teachers want to participate in self-generated online communities of K-12 teachers? *Journal of Research on Technology in Education*, 41(3), 279–303.
- Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational Leadership*, 60(8), 30–33.
- Institute for Learning Innovation & Grunwald Associates LLC & (2011). *NSF media and science learning: Lessons learned*. A public report accepted by the National Science Foundation, Arlington, VA. Retrieved March 1, 2011, from <http://www.ilinet.org/download/attachments/589826/The+Role+of+Media+in+Informal+Science+Learning.pdf?version=1>
- Jones, A., & Preece, J. (2006). Online communities for teachers and lifelong learners: A framework for comparing similarities and identifying differences in communities of practice and communities of interest. *International Journal of Learning Technology*, 2(2), 112–137.
- Li, C., & Bernoff, J. (2008). *Groundswell: Winning in a world transformed by social technologies*. Boston: Harvard Business School Press.
- Lin, F. R., Lin, S. C., & Huang, T. P. (2008). Knowledge sharing and creation in a teachers' professional virtual community. *Computers & Education*, 50(3), 742–756.
- Mitchell, J., Wood, S., & Young, S. (2001). *Communities of practice: Reshaping professional practice and improving organisational productivity in the vocational education and training (WET) sector*. Melbourne, Australia: Australian National Training Authority.
- Mourshed, M., Chijioko, C., & Barber, M. (2010). *How the world's most improved school systems keep getting better*. New York: McKinsey & Company. Retrieved March 1, 2011, from http://ssomckinsey.darbyfilms.com/reports/schools/How-the-Worlds-Most-Improved-School-Systems-Keep-Getting-Better_Download-version_Final.pdf
- Porter, J. (2008). *Designing for the social web*. Berkeley, CA: New Riders.
- PBS & Grunwald Associates LLC (2011). *Deepening connections: Teachers increasingly rely on media and technology*. Arlington, VA, and Bethesda, MD: Authors. Retrieved March 2, 2011, from
- Preece, J., & Schneiderman, B. (2009). The reader-to-leader framework: Motivating technology-mediated social participation. *AIS Transactions on Human-Computer Interaction*, 1(1), 13–32.
- Rentfro, E. R. (Winter, 2007). Professional learning communities impact student success. *Leadership Compass*, 5(2). Retrieved March 6, 2011, from http://www.naesp.org/resources/2/Leadership_Compass/2007/LC2007v5n2a3.pdf
- Resnick, L. B., & Hall, M. W. (June 2001). Learning organizations for sustainable education reform. *Daedalus*.

- Ridings, C. M., Gefen, D., & Arinze, B. (2002). Some antecedents and effects of trust in virtual communities. *Journal of Strategic Information Systems, 11*(3-4), 271–295.
- Schlager, M. S., Farooq, U., Fusco, J., Schank, P., & Dwyer, N. (2009). Analyzing online teacher networks: Cyber networks require cyber research tools. *Journal of Teacher Education, 60*(1), 86–100
- Tobin, D. R. (1998). *Building your personal learning network*. Port Chester, NY: Corporate Learning Strategies. Retrieved March 2, 2011, from <http://www.tobincls.com/learningnetwork.htm>
- U.S. Department of Education, Office of Educational Technology (2010). *Transforming American education: Learning powered by technology*. National Education Technology Plan 2010. Washington, DC: Author. Retrieved March 1, 2011, from <http://www.ed.gov/sites/default/files/netp2010.pdf>
- Vavasseur, C., & MacGregor, S. (2008). Extending content-focused professional development through online communities of practice. *Journal of Research on Technology in Education, 40*(4), 517–536.
- Wang, C.-Y., Yang, H.-Y., & Chou, S.-C. T. (2008). Using peer-to-peer technology for knowledge sharing in communities of practices. *Decision Support Systems, 45*(3), 528–540.
- Warlick, D. (2010). *A gardener's approach to learning: Cultivating your personal learning network*. Raleigh, NC: The Landmark Project.
- Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Boston: Harvard Business School Press.
- Wenger, E., White, N., & Smith, J. (2009). *Digital habitats: Stewarding technology for communities*. Portland, OR: CPSquare.
- Wenger, E., White, N., Smith, J., & Rowe, K. (2005). Technology for communities. In L. Langelier (Ed.), *Working, learning and collaborating in a network: Guide to the implementation and leadership of intentional communities of practice* (pp. 71–94). Quebec City, QC: CEFIRO.
- Wu, J. J., Chen, Y. H., & Chung, Y. S. (2009). Trust factors influencing online community members: A study of transaction communities. *Journal of Business Research, 63*(9–10), 1025–1032.
- Young, M. L., & Tseng, F. C. (2008). Interplay between physical and virtual settings for online interpersonal trust formation in knowledge-sharing practice. *Cyber Psychology & Behavior, 11*(1), 55–64.

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AIR is one of the largest behavioral and social science research organizations in the world. AIR's overriding goal is to use the best science available to bring the most effective ideas and approaches to enhancing everyday life. For AIR, making the world a better place is not wishful thinking. It is the goal that drives the organization. Founded in 1946 as a not-for-profit organization, AIR conducts its work with strict independence, objectivity, and non-partisanship. The intellectual diversity its 1,500 employees enables AIR to bring together experts from many fields in the search for innovative answers to any challenge.

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Consortium for School Networking (CoSN)

CoSN is the premier professional association for school, district, and educational service agency technology leaders. CoSN's members are a unique blend of education and technology leaders and decision makers from the public and private sectors. The mission of CoSN is to empower K–12 district technology leaders to use technology strategically for the improvement of teaching and learning.

www.cosn.org

Forum One Communications

Forum One is a digital strategy and technology consulting firm focused on driving progress on issues of importance such as health, education, international development, social justice, and the environment. Forum One provides expertise in Internet strategy, online collaboration and community, user experience and design, social media, and innovative website development. Forum One's solutions help influential organizations engage their target audiences, raise their online prominence, and increase their impact.

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Friday Institute for Educational Innovation

The mission of the William and Ida Friday Institute for Educational Innovation is to

advance education through innovation in teaching, learning, and leadership. The Friday Institute is a center for fostering collaborations, bringing together researchers, policymakers, practitioners, business leaders, and other community members to address critical issues in education. The institute's work focuses on helping schools become future-oriented organizations that prepare students for success in the global, knowledge-based, technology-driven, culturally diverse, rapidly changing world in which they live.

www.fi.ncsu.edu/

Grunwald Associates LLC

Grunwald Associates LLC is a research and consulting firm that focuses on the interplay between education, families, and new media. Public surveys led by Grunwald Associates have helped inform important national debates around education technology, and Grunwald custom research provides guidance to clients in meeting the needs of education institutions. Real-world experience is the foundation for all of the firm's work. For more than 15 years, Grunwald team members have pioneered online community development and management techniques for a variety of organizations.

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State Educational Technology Directors Association (SETDA)

Founded in 2001, the State Educational Technology Directors Association (SETDA) is the national member association that represents the interests of the educational technology leadership of state and territorial education agencies in all 50 states, the District of Columbia, and the Bureau of Indian Affairs. SETDA members work collectively and in public-private partnerships to ensure that meaningful technology innovations with broad potential for systemic improvements and cost savings in teaching, learning, and leadership are brought to scale.

www.setda.org

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