A PERFORMANCE-BASED DEVELOPMENT MODEL FOR ONLINE FACULTY

Berlin Fang

Faculty development in distance education does not happen in a vacuum. It is often interwoven with efforts to increase adoption of distance education programs and increase the effectiveness of online teaching. Training might not be the only way to meet these needs. This article presents a new faculty-development model, based on a systematic performance analysis schema. Several alternatives to traditional training are proposed, including performance support, knowledge sharing, communities of practice, and formative evaluation.

FOR MOST FACULTY MEMBERS, teaching online is still a rather new experience. Most institutions use training to help faculty transition to online teaching or to use Internet-based tools to supplement their teaching in a more traditional setting. In integrating online tools into their teaching, faculty will need to deal with many factors, such as the use of technology tools, new pedagogical considerations, and new ways of interaction between members of a class. Faculty members vary in their familiarity with and adoption of online teaching tools. Using a one-size-fits-all training approach when they have varied individual needs may not be effective.

NEEDS IN THE ONLINE ENVIRONMENT

In an online environment, training and development of faculty do not occur in a vacuum. Faculty members' backgrounds and contexts differ even if they use the same tools. Some are starting to experiment with new tools yet have not gone far enough to adopt them. Some have used the online teaching tools for a substantial period of time but are lacking in the skills to make their online teaching more efficient or effective. Generally speaking, there are two major factors to consider when designing any faculty-development interventions in an online context: adoption of online teaching tools and effectiveness of online teaching.

Adoption

Even in technology-based societies like the United States, online education is an innovation compared to the education that happens in a brick-and-mortar classroom setting. Like any innovation, its diffusion depends on a number of factors. In *Diffusion of Innovations,* Rogers (2003) lists the factors that may matter in increasing diffusion: innovation, communication channels, time, and social networks. Some of these factors are not easy to change, such as time. One has more leverage with others. Institutions often see a bell curve distribution of adoption, on which users may be categorized as innovators, early adopters, early majority, late majority, or laggards. When designing faculty development-interventions, the stages and status of diffusion should be taken into consideration. Many leverage points are available in the adoption process to make online teaching better known and more familiar to potential users. For instance, social networks can be consciously built and orchestrated to increase awareness. Early adopters can be invited to coach later users. These leverage points may be purposefully integrated into the faculty-development process for diffusion purposes.

Effectiveness

Effectiveness is another major consideration in faculty training. Whereas adoption concerns the *width* of use (namely, how many people are using online teaching tools),

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effectiveness concerns the *depth* of use (namely, how well are the faculty using technology tools in their online teaching). Adoption without effectiveness will hurt students' learning outcomes and, in turn, the reputations of both the faculty members and the institutions they are affiliated with. The improvement of effectiveness is a systematic process, involving multiple stakeholders and their input.

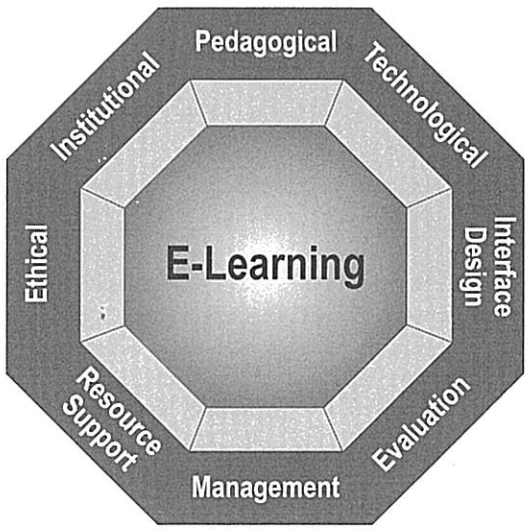
As shown in Figure 1, Khan identifies pedagogical, technological, interface design, evaluation, management, resource support, ethical, and institutional factors as critical to e-leaning success. Khan's model suggests that increasing the effectiveness of online education is a systematic process. Faculty development should therefore be put into a performance-based context. During the Blackboard User Group meeting in Chicago in 2006, faculty development emerged as one of the most popular topics. Institutions vary in their approaches for faculty development, and the most frequently used method is formal training. Consideration of diffusion and effectiveness can lead us to think of other possibilities. In some cases formal training should not be the only option. Support and the environment may play an equally if not more important role in motivating and enabling faculty members to use online teaching tools.

For instance, consideration of diffusion leads us to reflect on these issues:

- Does the institution maintain an incrementally improving, user-friendly learning-management system?
- Does the institution maintain effective communication channels to allow faculty members to share their online teaching experiences and best practices?
- Does the institution form an effective social network to enable faculty members to coach each other?

Consideration of effectiveness suggests that these are important questions:

- Does the institution have an effective organizational structure staffed with qualified personnel? For instance, does it have an administrative team, a designer team, and a technical team to handle the various kinds of support needed by the online faculty?
- Do highly effective processes exist to support online teaching? For instance, does the institution have sufficient legal support to answer questions about copyright? Is there a course review process to ensure the quality of courses? Is there a research process to incorporate the latest findings in educational technology?
- Does the institution have a culture of collaboration, innovation, and knowledge sharing so that online faculty members do not feel isolated from each other and from other teams in the university?



Source: Khan, 1997.

FIGURE 1. KHAN'S MODEL FOR E-LEARNING SUCCESS

FROM TRAINING TO PERFORMANCE IMPROVEMENT

The term *faculty training,* which many institutions are using, might be a misnomer. Generally speaking, training develops trainees' knowledge and skills. In numerous cases, however, trained faculty members may still lack continued support, motivation, or a congenial environment. Weakness in these areas prevents further diffusion and, in most cases, greater effectiveness as well. Therefore it is more desirable to use the term *faculty development,* a term broad enough to include more types of interventions, some of which may be effective alternatives for some previous approaches.

Strictly speaking, faculty development is a matter of training, motivation, and support. How well a faculty member is doing should not be thought of in terms of success or failure or of a particular training program. Instead, it should be put in the context of performance improvement. As scholars in the performance improvement field have repeatedly emphasized, a performance problem can result from a deficiency in skill (Can they do it?), in motivation (Will they do it?), or in environment (Does the environment support it?). If one focuses on these root causes of problems, rather than just the presenting issues, the chance of success should be much higher. In *Designing Instructional Systems,* Romiszowski (1981) draws a chart that summarizes the common causes of performance problems very well, and he also recommends interventions for these causes.

The schema in Table 1 provides a systematic framework to guide the improvement of online faculty-development

programs. This schema also sheds new light on the two major considerations in the development of online education in the higher education context. In terms of the adoption consideration, some faculty members have the appropriate skills and conditions for teaching online, yet they do not have any incentive for doing so. This could lead to the problem of having few early adopters. Training may help in some small way, but it is not going to address the real issue. Faculty members' concern may be that their traditional courses will be cannibalized once they move to teaching online ("good performance is punished"). Or they may fear that they will not receive the same kind of recognition for teaching online as they could for teaching traditional courses ("no obvious consequence"). Or they may fear that they will have to invest tremendously more time into designing online courses. These concerns can be easily addressed by providing appropriate recognition, an equal or greater teaching stipend, and instructional design support.

In terms of the effectiveness consideration, some faculty members may rely heavily on support staff for the design and even teaching of their e-courses. Some institutions

TABLE 1 ANALYSIS SCHEMA FOR PERFORMANCE PROBLEMS

CATEGORY OF PROBLEM	ANALYSIS OF PROBLEM	INTERVENTION
He never could perform well	He does not have the necessary prerequisites	• Teach the prerequisite • Reassign/transfer • Restructure the job
	He has the necessary prerequisites	• "Telling" • "Showing" • On-job training • Formal instruction (course)
He used to perform reasonably well	The problem tasks are rarely practiced	• Plan, practice, pretrain • Supply a manual • Supply job aids
	The problem tasks are frequently practiced	• Enlarge the job • Enrich the job • Plan feedback of results
What is the consequence of performance	No obvious consequence	• Plan feedback of results • Increase the reward for good performance
	Poor performance is rewarded	• Eliminate the reward for poor performance • Increase the reward for good performance
	Good performance is punished	• Eliminate the punishment consequence • Increase the punishment for nonperformance
How is the job organized	The method or equipment used is deficient	• Replan the equipment or workspace • Replan the work methods or sequence
	The management or supervision systems are deficient	• Reorganize the responsibilities • Reorganize the systems of management

Source: Adapted with permission from Romiszowski, 1981, p.108.

invest heavily in such support infrastructure to motivate more faculty members into teaching online. This support infrastructure typically helps faculty members. Yet it can backfire. It can reward those faculty members who do not want to invest time and effort in learning to use the technology tools. This problem may be exacerbated if the evaluation process does not take the amount of support into account. In other words, ineffective users could be rewarded because support staff have put extra effort into making these users' courses look good. Research into such motivational areas is much needed.

A NEW MODEL FOR FACULTY DEVELOPMENT

The following proposed model for performance improvement (see Figure 2) is based on Romiszowski's schema. Using this model, it is possible to incorporate multiple interventions and involve multiple stakeholders to improve faculty performance in online teaching. For instance, formal training is used to develop faculty members' prerequisites so that skill deficiency is addressed. Communities of practice partially address motivational problems, because such communities reassure faculty members that they are not isolated islands when they are teaching e-courses, that they can expect others to be having similar problems. Together with these others, they can search for solutions and identify best practices. Knowledge sharing can be used as a positive reinforcement process in which the more experienced or skilled users get recognized by the community. Formative evaluation provides feedback so that faculty members can improve the quality of their courses without having to be judged. Performance support is an umbrella term that encompasses manuals and job aids, or their online equivalents. This model uses these five categories of interventions to simplify the otherwise rather complex schema. It seeks to balance *knowledge in the world* (things faculty members do not have to learn) and *knowledge in the head* (things that faculty members had better learn to be more effective) (Norman, 1988, p. 57), skill and attitude, and individuals and their organizations.

The following paragraphs describe these five categories of development interventions in more detail.

FIGURE 2. A PERFORMANCE-BASED FACULTY-DEVELOPMENT MODEL

Formal Training

Some faculty members are lacking in basic skills needed for teaching online. For instance, they do not know how to use a learning-management system to design and teach courses. They are not proficient users of Microsoft Office, Excel, PowerPoint, MovieMaker, and TextAloud. They are not familiar with Web 2.0 applications, such as blog, wiki, social networking, or bookmarking applications. Whether their deficiencies are in basic applications or emerging technologies, formal training can do much to help them obtain the basic prerequisites for online teaching. Administrators of online education are sometimes hesitant to provide such training because they are not familiar with some of these emerging technologies themselves.

However, there are alternatives to formal training. For instance, the administrative team for online education can continue to manage the training processes, but trainers can come from such varied sources as suppliers, peer institutions, and off-the-shelf or customized commercial training programs. Most industry conferences also offer preconference workshops that users or potential users can attend to received training.

This said, formal training programs do not always turn out to be a preferred choice for faculty members. For instance, between 2001 and 2002 the Center for Instructional Technology (CIT) at Marshall University scheduled 99 hours of formal training (one hour for each workshop). About 75% of these workshops were cancelled due to lack of attendance (Christian, 2006). The center was thus motivated to pursue other options.

Communities of Practice

The use of communities of practice is a rather new phenomenon. The theory behind it reflects constructivist thinking in education. Knowles, Holton, and Swanson (1998), for example, believe that constructivist teaching is more appropriate for adult learners as it focuses more on realistic contexts, authentic problems, the use of teachers as scaffolds, and the use of cognitive tools in the teaching process (Johnson, 2001). A community of practice is an open and fluid kind of organization that gathers users of different levels and backgrounds so that they learn together or achieve some shared goals. In most higher education institutions, faculty and staff work in different cultures. Distance education, however, is often administered by staff members. From the perspective of some faculty members, these staff members are not *us.* They are the *technical people* or *support people,* people who sometimes make faculty members' work difficult because they have specific requirements for the course management processes, some of which faculty believe infringe on teaching or academic freedom. Some faculty may be intuitively resistant to or intimidated by the use of technology. Therefore, they are sometimes reluctant to attend training events that these staff members arrange for them. They are, however, more comfortable communicating among themselves, as equals or colleagues. Administrators of e-learning can take advantage of faculty preferences by directly or indirectly building and facilitating such communities of practice. In a recent book, Hatch (2006) describes four "key influences on learning": prior knowledge, current context, social interactions, and representations (p. 40). The use of communities of practice plays a vital role in promoting social interactions and helping newer online teachers understand the current context in which they will be working.

Such a community is sometimes achieved by faculty members in an informal way. Sometimes, administrators can initiate and incubate it and then let it evolve into a life of its own. For instance, administrators could identify novice users and expert users in online teaching and pair them with each other in coaching relationships so that skills can be transferred among them.

Administrators can also form user groups in colleges, departments, or even an entire campus. If these communities are formed in groups such as academic departments, similarity of pedagogy may draw people together so that best practices of online teaching can quickly diffuse. However, less desirable practices could also spread through the use of such user groups, especially at the early stage when nobody is actually sure what success looks like.

To broaden teachers' perspectives, larger user groups should also be formed. Regular user-group meetings, workshops, and listserv exchanges can bring teachers' attention to alternative ways things are done by other faculty members. When faculty participate in such larger user groups across disciplines, institutions, or even regions, they are more likely to identify benchmarks or best practices they can use to adjust their own practices.

Performance Support

Romiszowski suggests that some tasks are not frequently used, and therefore they do not have to be "learned" (see Table 1). Instead, he recommends the use of manuals or job aids. In today's online teaching environment, such manuals and job aids can take newer forms, appearing for example as electronic performance support systems, or EPSSs (Fang, 2005).

Performance support can be offered through any of the following methods:

- Administrators can build an online support center to provide an indexed, well-categorized pool of resources for frequently asked questions about tasks that faculty members do not have to commit to their memory. For instance, the support center could provide tutorials or animated demonstrations on how to update courses between semesters, how to set course dates, or how to update exams. The resource center could also provide flowcharts of such processes as course application, course design, and course approval. Because these processes are not used on a daily basis, faculty are not likely to spend time and effort to learn them. It is more desirable to develop visuals to guide faculty through the processes when needed.
- Staff for online course development can develop support tools to be embedded in course management systems to help faculty members accomplish their tasks. For instance, software for developing PDF files can link to Web sites that offer free downloads of tools commonly used in online courses and links can be provided to other resources available in the school, such as the writing center, the IT services center, and the tutoring center. Other tools to explore are tools that provide just-in-time online assistance for faculty members
- Course design and development units are typically considered support functions. They can play an active

role in supporting, advising, and coaching faculty members. As many technology tools converge in such units, course designers and developers could serve as innovators or early adopters of emerging technologies, so that they always stay on the leading edge to better support faculty needs. Course design and development departments can also distinguish between tasks used frequently and those used less frequently, between faculty members who are motivated to learn and those who cannot or will not learn. With this preliminary analysis of needs, appropriate development interventions can be recommended. Using their experiences of working with faculty, instructional designers and developers can become major contributors of content for electronic performance support systems or tools.

Formative Evaluation

Formative evaluation is evaluation aimed at making improvements before a program is completed. It is often contrasted with summative evaluation, which is used for making a go or no-go decision about a program (Scriven, 1991). Generally speaking, both types of evaluation are necessary to guarantee the quality of online education. However, when most faculty members are experimenting with online teaching, making negative judgments may hinder motivation for adoption. In other words, evaluation should not be set up in a way that forbids trial-and-error learning. Formative evaluation is much more desirable than summative evaluation until most faculty members have moved from considerations of adoption to considerations of effectiveness. Formative evaluation can be used as a way to develop faculty capability in using technology tools for teaching online. It also reflects Romiszowski's recommendation to plan "feedback of results," as shown in Table 1.

Formative evaluations can be formal course evaluations such as midterm course surveys, feedback from the academic unit, feedback from instructional design experts, or feedback from quality control organizations or committees. Formative evaluations can also be informal, such as discussions among faculty members at user-group meetings and routine communications between course designers and the faculty members. If such feedback does not label a course as a "success" or "failure," the input can be useful for making course improvements. It is desirable to communicate to faculty the distinction between formative evaluation and summative evaluation, in case they resist such feedback as a judgment on their ability to teach. The process of incorporating formative evaluation results is a process of learning in itself. If faculty are open to learning better ways to design and teach their courses, feedback from students, course designers, review committees, and their own peers can do much to help them grow as teachers of online courses.

An important question to consider in formative evaluation is the identification and development of evaluation standards. The standards used give a message about the outcomes or practices deemed desirable. If standards are rigid, innovations in design and teaching can be inhibited. If standards are too loose ("anything goes"), then poorer courses are offered and students suffer. Evaluators should seek to identify and maintain a fine balance between the desire to conform and the desire to innovate. The author recommends that the evaluation standards themselves be evaluated regularly to incorporate new findings and recommendations in distance education. A certain flexibility has to be maintained to encourage innovations. Flexibility is made possible by focusing on the objectives or principles in course design and delivery and not just the demonstrated practices. For instance, instead of saying, "A course should have at least five discussion topics," which is a bean-counting standard, evaluators can make this recommendation, "Use discussions to promote a sense of community and interaction in the course." Instead of the standard, "Use exams and quizzes to assess student learning for each module," evaluators could recommend, "Use appropriate assessment tools to assess student learning for each module." This way, faculty members can select the methods or tools most appropriate for the content they are teaching. For instance, "appropriate assessment tools" may include not only quizzes and exams but also discussions, online presentations, group projects, and course portfolios.

Knowledge Sharing

Knowledge can be all the more powerful once it is shared. The emergence of wiki, blog, social bookmarking, and social networking applications is supposedly taking us to a *participation culture* (Curteen, 2006) in which the principles of connection, sharing, and open-endedness are encouraged. This culture can also be applied to faculty development in distance education. Institutions can capitalize on the principles of open sourcing to improve their faculty-development models. After all, in an age when one can use search engines to find almost anything on the Internet, information or knowledge should not be considered as sacred. As a matter of fact we risk erring on the side of overabundance. A best-selling book basically says we have moved away from the information age to the conceptual age (Pink, 2005). Knowledge sharing helps users find the quickest routes to the information, tools, or resources they need. It is therefore highly desirable, on an institutional level, to encourage faculty members to share what they have learned, instead of simply hoarding knowledge.

TABLE 2	APPLICATION OF THE MODEL AT MARSHALL UNIVERSITY
METHOD	APPLICATION
Formal training	Product training is offered by the product supplier. Training workshops are offered by CIT, focusing on the use of the learning management system. Training workshops are offered by the Center for the Advancement of Teaching and Learning, focusing on online pedagogy.
Communities of practice	A user group is in each of the two campuses. The groups meet every month to exchange ideas and experiences. CIT has launched an initiative to form affinity groups among faculty members so that expert users of the learning management system can coach novice users. User groups use listserv and online forums to share learning.
Performance support	The course design and development unit is a support center that helps faculty members design and develop courses. It also supports faculty members as they teach the courses. CIT develops animated tutorials to help faculty members go through certain procedures easily in designing or teaching their courses. CIT also publishes frequently asked questions on the Internet so that faculty members can quickly find answers or related links. It would be very desirable to develop flowcharts to help faculty members go through course development, review, and revision life cycles. Current processes are sometimes confusing.
Formative evaluation	All courses go through student evaluations at the end of the semester. Findings help faculty members make improvement. The Faculty Committee for Online Instruction reviews each course at the conclusion of development. Valuable input from the committee members helps faculty members make improvement and brings good practices to their attention. The committee reviews existing courses every two years to help faculty members make sure the courses are still compliant with the latest standards. Latest findings are also incorporated. As part of the review procedure, academic units also need to sign off on e-courses to provide feedback on the course content, as well as the pedagogy for the specific subject matter. Course designers and developers help faculty members make improvements to courses.
Knowledge sharing	An online forum is maintained to share experiences and insights. CIT and the Faculty Committee for Online Education also organize course showcases to allow faculty members to share their courses with other faculty. CIT and the faculty committee organize road shows to demonstrate the course management system and emerging technologies.

CIT = Center for Instructional Technology

Knowledge sharing does not always happen or continue unless an institution's faculty and staff have a shared recognition that this is commendable performance behavior. As Romiszowski has pointed out, one should "increase the reward for good performance." No matter how knowledge sharing is initiated, volunteered, or facilitated, practices of sharing should be positively reinforced. As management consultant Teresa Woodland (personal communication to the author, May 18, 2006) suggests, successful organizations give time and rewards to encourage their employees to develop and share knowledge. If faculty and staff members devote substantial time to writing a paper or a tutorial

that has the potential of benefiting the organization in terms of its knowledge base or institutional reputation, such effort should be encouraged and supported. Such effort should also be considered part of the faculty and staff members' workload.

Institutions should also build an infrastructure to promote knowledge sharing. This infrastructure can include platforms that help people to easily share what they know or what they want to know. Examples are mini-conferences and meetings as well as online platforms such as SharePoint sites, wiki sites, online forums, mail groups, and blogs.

APPLICATION OF THE MODEL

Performance improvement is not all about training. It is about how well one diagnoses a real need and how well one screens, selects, implements, and evaluates appropriate interventions or methods. The model presented here is an attempt to reflect such performance-oriented thinking. This model also addresses both adoption and effectiveness considerations in distance education.

This model is generated from real practices at Marshall University. Table 2 shows how this model is actually used there.

The model has proved to be effective at Marshall University. The practices described in Table 2 took shape over 10 years of experience, during which the university's online course enrollment grew by over 30% each year, in spite of the fact that it is more expensive to take a course online than in a classroom setting. The rapid growth is due at least in part to the way faculty members are developed in their capability to teach online.

CONCLUSION

To be simple and easily generalizable, the model presented here is not a complete mapping of the performance model. Nor can it be claimed to include all the ways to help faculty members develop competence in distance education. However, it should take us a step further from merely using training programs that are dubious in their impact. It can also be a start for further discussions on performance-based faculty development in distance education.

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BERLIN FANG received his MS degree in instructional design from the Department of Instructional Design, Development and Evaluation at Syracuse University in Syracuse, New York. Prior to this, he earned an MA degree in English language and literature from Nanjing University in Nanjing, China. Berlin has extensive experience and training in performance improvement through his work with leading management consulting organizations such as McKinsey & Company and the American Management Association. Currently, he is an instructional designer at the Center for Instructional Technology at Marshall University. He provides instructional design consulting and coaching to faculty members at Marshall University. Berlin may be reached at fangb@marshall.edu.