
Scalability in Distance Education: "Can We Have Our Cake and Eat it Too?"

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Abstract

The decision to increase distance education enrollment hinges on the factors of pedagogical effectiveness, interactivity, audience, faculty incentives, retention, program type, and profitability. A complex interplay exists among these scalability concerns (i.e., issues related to meeting the growing enrollment demand), and any program's approach usually requires trade-offs. At Brigham Young University's Department of Independent Study, administrators have recently evaluated the effectiveness of their highly automated distance education classes, determining that more interactivity requires a trade-off with the accompanying demands. This article provides perspectives on these issues and then proposes four models that increase interactivity while allowing for some scalability.

Introduction

Factors of scalability constantly concern most distance education administrators at traditional universities, and such is the case at Brigham Young University (BYU). Always pressing is this question: How much should we expand our enrollments, and what will be the consequences if we do? Many administrators find that "the pressure to increase the scale of the program is both internal and external. The program faculty themselves would like to see their efforts reach a wider audience and possibly generate extra revenue," while the university encourages "many departments and programs in various colleges to pursue the development of wide-scale distance education initiatives" (Snider, 2003, p. 123). Scalability in this context is defined as increasing enrollments while still being profitable, or at least financially self-sustaining. BYU's Independent Study program has experienced strong growth in the past five years in its university enrollments and unprecedented growth in its high school and noncredit enrollments. In 1996, there were 12,995 students enrolled in the university program, and in 2002 we had an enrollment of 24,380. For our high school courses, there were 24,696 enrollments in 1996, and 52,001 by the end of 2002. The Bachelor of General Studies program (for returning students) that uses the Independent Study curriculum has also experienced major growth in its short history: it now

represents 12% of the total Independent Study university enrollments. However, it has become clear that the current size of the Independent Study program may place an additional load on already overloaded academic areas.

Increasing enrollments challenge some pedagogical approaches and changes the desired outcomes, making the optimal approach difficult to determine. Guri-Rosenblit (1999) has noted that “many conventional universities worldwide operate as large-scale universities and are in a continuous search to find the right balance between massification trends, quality education, and the catering to the individual needs of students” (p. 289). BYU embraces the “Seven Principles for Good Practice in Undergraduate Education,” authored by Arthur Chickering and Zelda Gamson in 1987 and adapted to a technological context with Stephen Ehrmann in 1996, as a foundation for quality instruction. It is difficult, though, to fully achieve each of these aims—especially those that emphasize interactivity—given increasing enrollments and limited resources. As Fred Saba (2003), distance education consultant, observed, “The outstanding question for [BYU’s] Independent Study, as well as for the university community, in general, therefore, is to what extent courses could be made scalable without compromising interaction between instructors and students.” In other words, BYU distance education administrators want to find out how to both have and eat their cake.

To decide the level of scalability for distance education, a complex set of related factors should be considered. This article first describes the scalability dynamics of pedagogical issues (especially interactivity), audience, faculty incentives, retention, program type, and profitability. Then four models that attempt to balance all related aspects in an acceptable manner are presented.

Scalability Factors

If the goal is to be highly scalable, then the delivery must first take advantage of technology, but the other variables mentioned (audience, retention, etc.) also come into play. As each of the factors is presented, notice how they can influence enrollment decisions.

Pedagogical Approaches and Effectiveness

Multiple pedagogical models exist for delivering instruction from a distance. Many experts, however, have separated the approaches into two categories—those that are “high tech” and those that are “high touch” (Patton, 2003). Allen (2001) refers to the high tech approach as the broadcast model, which is “characterized by a mainly one-way transmission of information, an intensive use of multimedia technology, relatively large class sizes (30+), and an emphasis on independent study by students” (p. 62). Such an instructional approach is highly scalable, because after initial development costs, expenses are relatively small for large enrollments. In comparison, Allen describes the high touch approach as the interactive model, which “requires less investment in multimedia and canned course materials, but more investment in human resources, . . . more faculty to be recruited and hired due to smaller class sizes, and more outlay in faculty training, certification, and development” (p. 63).

BYU’s distance education program has many courses that are self-directed and automated, relying heavily upon a system called Speedback™. This is the name for BYU’s Independent Study, computer-delivered instruction and feedback, and it is the representation of carefully prepared faculty feedback. Feedback through Speedback™ is remarkably prompt—one of the seven principles of a good undergraduate education (Chickering and Gamson, 1987). For the sake of comparison, instructors usually take one to two weeks after the arrival of the assignment

at the Independent Study Office to review assignments and post grades, whereas a Speedback™ assignment grade is posted within twenty-four hours. More notably, Speedback™ assignments submitted online receive immediate feedback and grading.

The online lessons in BYU's current delivery model utilize many strengths of current technology. Instructional design teams create the content to be "highly interactive so that students receive feedback as to how they are doing. When they are struggling, the computer can provide remediation. It can also branch to other parts of the unit if the material is either too difficult or too easy for the student, adjusting the material to their level of expertise" (Tiene, 2002, p. 22). Other advantages of this form of online distance education include "its empowerment of the individual's right to opt in and out of education and to study flexibly, its obvious commodification of education, [and] its ability to operate globally" (Rumble, 2001, p. 42).

Despite the inherent advantages provided by technology such as Speedback™, distance education administrators can encounter obstacles in promoting pedagogical effectiveness. Faculty lack expertise in design and delivery of course materials for online environments. It is difficult for faculty to develop instructional activities, because most do not have formal training in curriculum and lesson planning. Most faculty also have not planned "interactive strategies in advance of course delivery, as they are accustomed to relying upon verbal cues and the spontaneity of classroom discussion to serve as a catalyst for interaction" (O'Quinn and Corry, 2002, p. 2). Another challenge is that "nearly all distance education students and teachers . . . come from a background of classroom education. As a result, they retain deeply ingrained models of in-person peer groups, teacher directedness, and paced delivery and evaluation" (Anderson, 2001, p. 31).

Because of these deficiencies, strategies to boost faculty involvement in distance education, rather than relying principally on automated systems created by instructional designers, can be difficult to implement. Efforts to simultaneously increase scalability and direct teacher-student interaction must be accompanied by faculty training on appropriate methods. Unfortunately, too many faculty development programs for distance education "tend to be limited to how to use the technology or software, not on how to teach at a distance" (Schifter, 2000, p. 43). Teaching at a distance, including training on instructional technology techniques, is much more difficult than simple technology training. In response to this challenge, distance education personnel should be assigned to train faculty on what constitutes good instructional practice online, covering such issues as what is a reasonable response time (Frydenberg, 2002, p. 5). Other areas for training include promoting student participation in an online environment and learning to use class communication features (Otton, 2003).

Without training, "the natural tendency may be for some faculty to try initially to utilize the same teaching techniques in a distance learning environment as in a conventional classroom, but that quickly changes as they begin to assess the impact of technology on their ability to communicate effectively with students" (Dasher-Alston and Patton, 1998, p. 14). Technology can be used to connect teachers with their students, but only if professors know how to use the media effectively.

Whenever possible, technological media should be used to promote "higher levels" of learning among students—learning that goes beyond simple comprehension and memorization. However, the economics of education are such that higher levels of inquiry and investigation are costly and usually cannot take advantage of economies of scale that come with higher enrollment. A higher tuition is usually required of students if they desire more discussion and personalized attention. At the current level of technological ability, university faculty cannot depend on computers to lead or participate in serious discussion or debate. The faculty role becomes more critical when

students are at higher levels of inquiry.

While computers use simulations, games, tutorials, and data management tools to deliver knowledge effectively, they do not deliver as effectively for higher taxonomies of learning, such as evaluation and creation. Thus, certain types of learning are not currently scalable without abundant faculty involvement.

Interactivity

An appropriate balance should be maintained between scalability and interactivity, a factor that has been separated from the other pedagogical issues because of its preeminent importance. BYU administrators are aware that the literature is replete concerning the importance of student-teacher interaction. “Student-instructor interaction . . . is considered the soul of collegiate learning and, not inconsequentially, is a primary focus of many accreditation reviews (Eaton, 2000)” (Paulson, 2002, p. 132). Concerning distance education, Cheney (2002) writes that “the quality of human interaction is more critical than the technology as a predictor of success (Kelsey 2000, White and Weight 2000)” (p. 4). Moreover, student-teacher interaction is not just important to the students. A study by Beaudoin (2003) “confirmed findings of other research activities which have concluded that quantity and quality of interaction between students and faculty and students with other students are the factors most closely associated with faculty satisfaction with distance teaching” (p. 1640).

All these authors suggest that “we must incorporate the strengths of specific technologies into sound instructional design, remembering to keep the intimacy of the teacher-student relationship foremost in our practice” (McIsaac, 1998, p. 33). As a university strongly dedicated to superior undergraduate teaching and student mentoring, BYU is committed to providing excellent learning experiences for its students and seeks to increase student-teacher interaction while remaining scalable.

In many ways, the distance education environment more easily facilitates strong student-faculty interaction than traditional education, in that the “role of the professor shifts from that of authority to the role of course manager” (Roberson, 2002, p. 2; Scagnoli, 2001, p. 21). The functions these course managers perform include “facilitator, teacher, organizer, grader, mentor, role model, counselor, coach, supervisor, problem solver, and liaison” (Riffee, 2003, p. 1). Since distance education instructors are relieved of much of the “responsibility of ‘covering the content,’ they [are] able to engage in ‘customized coaching’” (Offir, 2003, p. 67). From an administrative standpoint, such interactive approaches require more investment in human rather than technological resources (Allen, 2001).

Teacher-student interactions can take many forms, including the BYU Speedback™ model previously introduced, discussions, Q&A sessions, and mentoring. Models of delivery requiring heavy teacher involvement and mentoring may have their drawbacks though.

The introduction of mentoring and collaborative models reduces the scalability from practically unlimited to a factor of two or three, meaning that enrollments could probably only be doubled or tripled. When faculty are the main source of information and instruction, the classes must be manageable and therefore small.

Although many believe that “student-teacher interaction currently has the highest perceived value amongst students and thus commands highest market value” (Anderson, 2002, p. 4), learners sometimes have different preferences for interaction when compared to convenience. John Sener

(2003) of Sener Learning Services notes that a tension exists in distance education “between learners wanting the perceived benefits of synchronous interaction, and learners having a high need for maximum flexibility and convenience.” Sener explains that this creates two problems: “accommodating both types of learners in the same course, and streamlining course design to minimize wasted time.” He suggests that rather than try to find a happy medium (which is extremely difficult), establish “different course sections clearly identified by delivery mode and have learners self-select based on their preference.” He acknowledges, however, that “this adds yet another layer of complexity to the process and is not practical in many situations.” We would add that this frustrates scalability.

We believe that varying degrees of faculty-to-student, student-to-student, and student-to-content interaction establish the foundation of learning for all students. However, it is difficult and costly to do all these things all of the time. From our experience, we concur with the following position:

Sufficient levels of deep and meaningful learning can be developed as long as one of the three forms of interaction (student-teacher; student-student; student-content) is at very high levels. The other two may be offered at minimal levels or even eliminated without degrading the educational experience. High levels of more than one of these three modes will likely deliver a more satisfying educational experience, though these experiences may not be as cost or time effective as less interactive learning sequences. (Anderson, 2002, p. 4)

In addition, an earlier analysis by Independent Study indicated that interactivity has an inverse relationship with revenues, so it could, at some point, decrease the program’s ability to stay viable and support other resources on campus. This issue will be further addressed in the profitability section.

Audience

Another step in determining enrollment numbers is to decide which audiences are available or desirable. Administrators should identify target audiences from among distributed education constituencies: Degree-completion learners; Professional Enhancement Learners; Corporate Learners; ‘College Experience’ Learners; Life-fulfillment Learners; Pre-College K-12 Learners; and Remediation and Test Prep Learners (Oblinger, 2000). Knowing which audience to market to depends on the institution’s vision and mission. Institutions should also review their marketing strategies and capitalize on developing student markets. Florida Gulf Coast University’s strategic plan states that it wants to “identify market opportunities for distance learning courses and programs congruent with academic strengths,” and “develop ongoing management processes for reviewing, evaluating, and prioritizing market opportunities to implement distance learning courses and programs” (1998, p. 1). Enrollments can be increased if universities “create a greater awareness of the availability, viability, and benefits of distance education to students” (Penn State University SP, 1998, p. 21).

At BYU, it has been very difficult to make decisions about the appropriate audience, given the institution’s limited resources and wide-ranging possibilities. Traditional and adult students continue to be the university’s primary audiences, but the opportunity to expand high-school and noncredit enrollments through existing automated courses has never been more promising.

Another relevant variable for scalability is that students at different stages of education need particular pedagogical models to maximize their learning. For example, a younger student is probably not ready for in-depth discussions and inquiry of complicated concepts that are common among college students. Interactive approaches, such as mentoring and collaborative models,

which involve multiple participants in a planned learning investigation become more important to students as they advance in knowledge and learning. On the other hand, the Speedback™ model might be more effective for students at certain stages of education and levels of inquiry than others.

Program Type

Administrators must also consider whether to have students progress individually, with open enrollment for all courses, or whether a cohort system of students working within a degree is more desirable. Small classes and high levels of mentoring and collaboration usually involve cohort systems as students progress through the learning hierarchy. In contrast, students in an open environment can start and stop a course at their own convenience. Self-directed approaches (such as Speedback™) facilitate greater scalability of nontraditional students and give them opportunities to progress at their own pace, at their own place, anytime and anywhere. However, if the outcome they desire is a degree, it becomes more difficult to do in isolation. Students seeking a degree in an open entry-exit system must have a great deal of self-motivation in order for it to work. Oblinger (2000) asserts that “most students are seeking a degree or credential” (p. 38).

In promoting distance education courses, administrators should establish closer ties to academic colleges, departments, and faculty, focusing on relationships with deans and department chairs. Developing degree programs rather than individual courses promotes more commitment from academics. (Penn State’s “World Campus” has followed this strategy quite successfully.) As Joel Hartman, an administrator at the University of Central Florida, noted, “I have found that if I can get one dean to buy into a distance education idea, others follow suit” (Miller, 2003).

BYU’s current plan is to consider strategically the course and program offerings that academic deans and chairs identify, and focus less on growth. This means that some courses will be discontinued, while new ones will be added to support programs. Because the Independent Study program will emphasize supporting specific programs, including the Bachelor of General Studies, rather than creating a large portfolio of individual courses for the redefined audience, growth will likely be modest and profits marginal.

Load, Rank, and Status

Many challenges in distance education center on faculty obstacles, and administrators cannot afford to ignore these issues, especially if they desire greater scalability. Besides lack of space, staffing, and financial resources, there are other disincentives for increased faculty involvement in distance courses. Participating in such courses usually does not help professors’ promotion and tenure goals. Thus, “to the extent that distance education is a priority for the institution, administrators should align distance education goals with the university’s feedback and reward system. An example of this may be to give more weight to the development and delivery of distance education courses as a criterion for tenure” (Prester, 2002, p. 8). Unfortunately, in the status quo, “tenure, promotion, and release-time policies at most institutions fail to acknowledge the considerable time—measured in months, not days or weeks—needed to create a distance course” (Markel, 1999, p. 209).

Faculty also demand reduced workload, increased compensation, or both, for distance courses. Many professors feel they do not have time to do research, teach their normal load, and participate in the Independent Study program. Involvement in distance education can spread faculty members “even more thinly than is the current practice” (Lacost, 2000, p. 64). More than

half of distance learning faculty spend more hours on their distance learning courses than traditional classes. In spite of this, “84% of faculty get no course reduction, and 63% are compensated for their distance learning course as if it were part of their normal course load” (NEA, 2000, p. 7). Therefore, if administrators want to increase enrollment and have sufficient faculty to support more students, they must appropriately “address workload implications of developing new teaching strategies related to distributed learning” (Crawford et al., 2003, p. 24). Staffing resources at BYU are such that decreasing workload for faculty to facilitate greater interactivity in distance education courses is unlikely.

At Florida State, Washington State, and other universities, faculty are encouraged to participate in mentoring and can receive credit toward rank advancement. Administrators have found that mentoring simply doesn’t work if faculty participate reluctantly. Rank and advancement opportunities have been essential tools to generate interest in distance education. To achieve greater status, distance education participants should contribute to activities valued by their institutions. Because the emphasis on research dominates on so many campuses, “faculty must provide valid and reliable research-based evidence as to the impact of new learning environments on student outcomes before department heads and deans will be willing to encourage their faculty to participate in ongoing innovation efforts” (Brogden, 2002, p. 27). Distance education administrators at BYU would like to see great scalability made possible through load, rank, and status rewards being established for faculty participation in distance education.

Retention

The distance education literature indicates that the completion rate in distance courses has historically been extremely low, 40–50% at best (Moore and Kearsley, 1996). Similarly, studies by individual institutions suggest that course-completion and program-retention rates are generally lower in distance education courses than in their face-to-face counterparts” (Brady, 2001, p. 352). This is not true everywhere, especially since there is no standard for calculating completion rates for both campus and distance education programs. At BYU, however, retention in distance education and traditional education appears to be comparable when using similar measures (e.g., not counting students who drop classes during the first two weeks of a new term).

Whatever the case, many experts consider learning motivation to be “more important in distance education courses than in conventional courses, because distance learners with low motivation have more of a tendency to drop out or fail” (Jung et al., 2002, p. 160). “Moore (2001) noted that to be successful in delivering online courses, faculty must . . . provide specialized attention to students with low levels of self-directedness” (Lindner, 2003, p. 2).

Motivation and retention problems may be mitigated by mentoring and other encouraging social factors. Student-student and faculty-student interaction can be critical to the perseverance of struggling students. It is often the students who are having the most problems who “do not have the confidence to approach university staff” (Bolam, 2003, p. 187), so faculty and staff must take the initiative and reach out to these learners.

Most distance education programs strive to improve their retention rates. Since retention is linked to faculty and staff interaction, institutions cannot increase their enrollments (scalability) and expect to improve retention without adequate faculty and staff support for students. BYU would like to create an acceptable algorithm for both its on-campus and distance education programs to calculate and report comparable course completion results and establish a baseline.

Profitability

The annual market for distance learning is currently \$4.5 billion, and it is “expected to grow to \$11 billion by 2005” (Kariya, 2003, p. 49). Despite the promising potential for scalability, serious financial obstacles exist in administering distance education. Bates (2000) observes that “distance education units in dual-mode institutions are in fact facing many challenges as a result of changing markets, developments in technology, reduced government funding, privatization of higher education, globalization, and increased competition” (p. 1). Because of small margins and fierce competition, “few if any organizations are currently making real money from commercialized higher education online courses” (Bates, 2000, p. 6). Although technology allows greater student access, many are finding that it is not fulfilling its “promise to reduce the costs of instruction” (Brady, 2001, p. 348).

Funding challenges are a top IT concern for many administrators, so achieving current or future profitability is a chief focus when making scalability decisions. A study by Crawford et al. (2003) found that “IT Funding Challenges has become the number-one IT-related issue in terms of its strategic importance to the institution, its potential to become even more significant, and its capture of IT leaders’ time” (p. 12). A study from the Colorado Department of Education stated, “Reports from online programs across the country . . . consistently indicate that the cost per student of a high-quality online learning program is the same as or greater than the per-student cost of physical school [i.e., traditional] education” (Branigan, 2003, p. 1). The study also explained that most costs in education are for staffing, “so the savings that come from eliminating school buildings is miniscule and often is less than the cost of developing eLearning curriculum” (p. 1). Saba (2003) notes that while technology has brought costs down in every other sector of society, in education it has actually increased costs.

In general this is a difficult time for funding in higher education. Survey data from Green (2002) provide clear indicators of major budget cuts and declining technology spending across all sectors of American higher education; 31% of respondents in the survey agreed that budget cuts will seriously impede eLearning enhancement efforts (2002). As they make major decisions, “IT leaders must explore cost savings, understanding the differences between cost savings and cost shifting” (Crawford et al., 2003, p. 20). It’s often difficult to determine the university-wide effects of strategic changes carried out by distance education programs, and there are constant shortages of space and staffing.

Under the current model, BYU’s administratively-centralized and academically-decentralized distance education program is financially self-sustaining. BYU has shown an increase in profits each year for the past ten years, and a substantial profit for the past five years, a result of the economies of scale the program has achieved. In comparison, national trends show that sixty percent (60%) of administratively-centralized and academically-centralized continuing education programs will be completely self-supporting in their credit program offerings, and fewer (41%) administratively-centralized and academically-decentralized programs will be self-supporting (UCEA, 2001, p. 7). Also, sixty-four percent (64%) of continuing education programs in private institutions returned 20% to 100% of their net revenues to their parent institutions (UCEA, 2001, p. 10).

BYU’s Speedback™ system facilitates large classes and takes advantage of scalability efficiencies, making large return on investments possible. In contrast, although mentoring models and other more interactive approaches are inherently desirable, they are the least efficient forms of delivery from a financial point of view. Tutoring models implemented in other universities and considered by BYU are not scalable; they would increase costs tremendously. An example is the expense incurred as Florida State University adopted its mentoring approach. Initial costs for mentor support were covered by a special legislative appropriation to FSU of \$12 million for a

three-year period. Since fall 2002, its mentor program is supported by an addition of \$60 per semester hour, which is paid by all students in mentor-supported courses. Costs include a three-quarters time mentor coordinator, half time graduate assistant, materials, postage, travel and training budget, as well as the compensation for actually mentoring a course or courses. For these reasons, the mentoring approach is usually not scalable without significant financial subsidizing.

BYU's Present Scalability Strategies

Oblinger (2001) asserts that “new technology will transform higher education as we know it today” (p. 2), and we are already seeing such transformations. At BYU, distance education administrators concur with findings from the literature describing technology’s strong points, and will continue to use these in the future. They contend that technology-based learning is more scalable than traditional instruction, that it provides learners with more rapid, individualized feedback, and that it allows BYU to reach a greater variety of students, expand beyond the physical confines of campus, and meet adult learners' circumstances with more flexibility.

There are drawbacks, however, to automated and scalable models, since many require “a fairly high initial investment in technology and course development; revision costs are high, and in fields that change rapidly it can be difficult to maintain currency” (Allen, 2001, p. 62). Also, “students used to instructor-directed learning may feel somewhat lost in an environment that relies heavily on individual initiative and independent learning” (Otton, 2003, p. 28). These pedagogical, financial, and retention factors occasionally make it challenging to judge which approach is most beneficial.

Despite these drawbacks, numerous reasons still exist for continuing this approach. Foremost among these is the fact that many students prefer the Speedback™ model to instructor-directed learning. In a BYU survey of Bachelor of General Studies (2000) students, respondents were asked what they liked most about the program. The top three answers were that they could complete the course during their own time and at their own pace, they could do it from their own home, and they valued instant feedback. Other research substantiates the value of timely feedback: “According to the *First Report of the Harvard Assessment Seminars* (Light 1990, 31), ‘students overwhelming report that the single most important ingredient for making a course effective is getting rapid response on assignments and quizzes’” (Chizmar and Walbert, 1999, p. 254). Certainly these benefits influence enrollment numbers and retention. Requiring real-time student-faculty interaction would reduce flexibility, professors could not duplicate the fast response times available through Speedback™, and scalability would be marginalized.

Saba (2003) noted that in light of impressive achievements accomplished by BYU Independent Study, there is a “lingering concern among distance education administrators that modifying its operations to deal with the issues raised by faculty, and the request of students for more human interface might reduce its current revenues, thus compromising its ability to support campus resources such as the Center for Instructional Design.” Another problem is that alterations to the current delivery mode “might reduce its ability to compete with similar programs nationwide that are pouring an increasing number of courses and programs into the market with flexibility and accessibility.” Tampering with BYU’s current target audiences that are now working quite well may be imprudent.

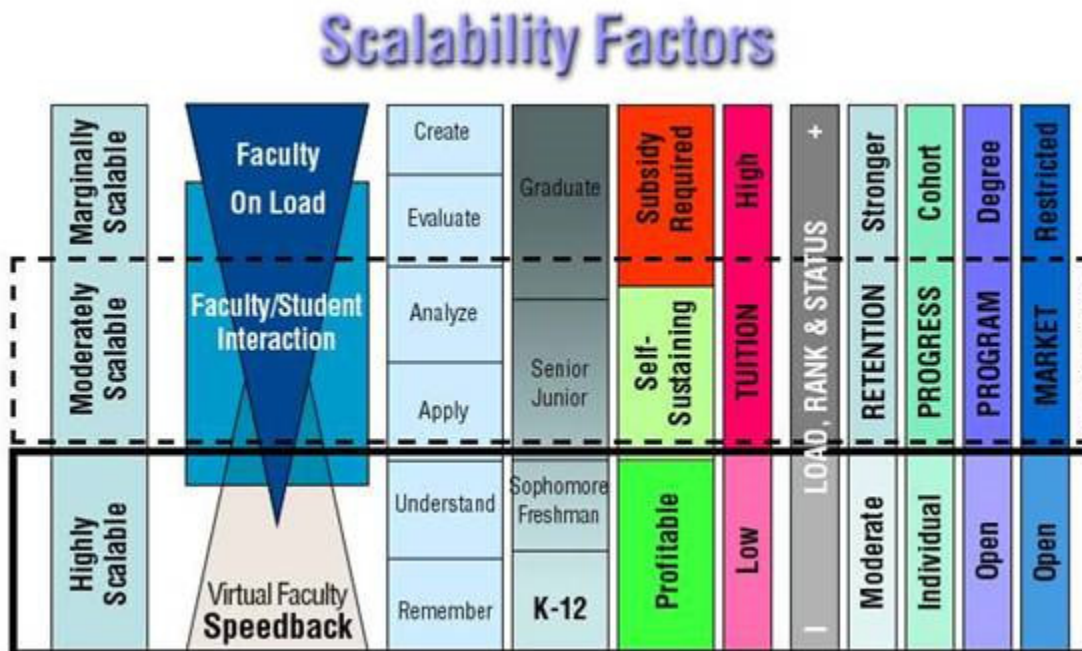
If BYU were to develop a mentoring model similar to that being used at Florida State University, many strategic policy decisions would need consideration. The new system would necessitate full-time faculty buy in; faculty load, rank, tenure, and advancement changes; mentors (e.g.

adjunct, retired, community college); further degrees offerings; a mentoring fee (\$180 per course); a launching subsidy; and appropriated funds. Later consequences could include marginal profits (leaving no funds for other projects), and reduced enrollment. This interplay of factors influences what directions administrators can take as they manage distance education enrollment.

As briefly mentioned in the “program type” section, BYU would like to maintain or moderately expand the university credit offerings through the Division of Continuing Education, while redistributing current offerings to more closely align with the Bachelor of General Studies and other degree programs. BYU plans to pursue program and degree development around BYU core content areas, including Family Life, Family History, Language, and Management. In a similar approach, Penn State RFP received 90 program proposals and after readiness analysis (e.g., faculty, market) targeted 20 of them.

BYU recognizes that scalability factors cannot be measured in isolation. To illustrate the point, we created Figure A (see below) to display how certain approaches are scalable when all factors are considered. Figure A identifies three levels of scalability: high, moderate, and marginal. For example, the highly scalable approach that BYU currently uses (see solid box on Figure A) focuses on Speedback™ and earlier stages of learning. It lends itself better to educational levels through the sophomore year, more profitability, lower tuition, and less concern for load, rank and status issues. It also produces moderate levels of retention and places more emphasis on open entry-exit courses that students can progress in at their own pace, independent of a cohort. If we wish to introduce more faculty-student interaction, the factors adjust as shown in the moderately scalable tier (see dotted box on Figure A).

Figure A. Scalability Factors



Four Proposed Models

After considering the mixture of scalability variables depicted in Figure A, BYU distance education administrators developed four delivery models that seek reconciliation among these issues. The models outlined here accept as their premise well-designed instructional content that

emphasizes student-content interaction while incorporating an appropriate degree of personalized interaction. Saba (2003) emphasized that the continued use of technology to leverage scarce faculty resources is critical. He advocates the advanced or “post-industrial” use of individualized, automated, and prompt feedback, but not at the expense of entirely removing the content expert (faculty member) from the learning experience. By employing a number of different models, BYU distance education administrators give faculty the opportunity to select among various approaches. Furthermore, more tools to support interaction will be possible for distance education courses with the adoption of a Learning Management (and Interaction) System, such as Blackboard™.

Direct Student-Faculty Interaction Model

Using several courses with enrollments of sufficient size and faculty willing to engage for a two-semester commitment, this model establishes “electronic office hours” for students to interact directly with faculty. With an increasing emphasis on direct faculty-student interaction and some faculty members expressing concern that no one else can “mentor” their students better than they can, this data-collection technique lets participating faculty directly receive questions from students working on courses at a distance. Methods for interacting will need to be established for ease of access, response times, and data collection. Participants in the experiment will need to discuss and define possible forums, including email, restricted chat rooms, and listservs. The academic discipline could dictate the type of interaction format that is best for a particular course.

To examine students’ desire for contacting faculty directly, this model creates an electronic communication system for selected courses. The experiment will yield information on student and faculty perceptions of utility as well as quantifiable data on extent of use, categories of types of interaction, and potential need for such interaction.

On-demand Support

This model requires a TA to provide moral support and targeted content help for students facing problems with their coursework. While the TA’s help options are available to students, they are not required. The TA interacts with the students by phone, email, discussion board, fax, and face-to-face meetings.

Specific instructions are given to the TA. These instructions outline areas of TA responsibility which include turn-around time (24 hours to acknowledge communication and 72 hours to answer student questions), online office hours, tracking pertinent information about the communication, developing and maintaining a frequently asked question (FAQ) database, moderating the discussion board, and pro-active contacting and counseling.

TA Course Development/Quasi Mentor Afterward

This model provides additional support to faculty in two areas: support for distance education courses that they will write or have written, and support for other traditional education functions. The goal of this model is to buy the “willing” support of the faculty and at the same time provide direct support for them.

Specific responsibilities of the TA, under the direct supervision of the faculty, include:

1. Help write or revise a course.

2. Function in the same manner as in the On-Demand Support Model.
3. Perform any task as requested by the professor.
4. Divide time equitably between assignments #2 & #3 above (i.e., 10 hrs/week in each area) after the course is written.

This model assumes that the faculty would find “extra” help (a TA) very beneficial and would therefore feel more positively disposed to guide the TAs in helping with distance education courses.

The costs would support a TA at a \$15/hr (approx.) rate for 20 hrs/week during fall and winter semesters (the TA would work full-time with Independent Study during spring/summer). In this scenario, the cost would be \$15,000–20,000 per TA. To be cost effective (or at least break even), the course would have to have a high enrollment (approximately 60 paid registrations). This model would probably be best suited to courses with a high enrollment history or potential. Finding space for the build-up necessary to support this service will affect how scalable we really can be—we would probably need another floor at our distance education building to support the TAs, plus additional FTE overhead to hire, train, and supervise these additional TAs or mentors.

Student-to-Student Mentoring Requirement (Service Learning)

In this model, students from certain classes who have progressed to the final third of their coursework will enter a “mentoring” or “tutoring” pool for other students in the course. This would be one of their final requirements for successful course completion. The last-third student would be assigned, depending on the number of available students, to assist some first-two-thirds students. The last-third student would be expected to communicate by email with his or her assigned students for at least one month or for a total of five documented hours, both encouraging and providing content support to the first-two-thirds students.

Such an approach would improve the student-faculty and student-student interaction while providing a teaching opportunity to the more advanced student, which may promote deeper and more permanent learning.

Conclusion

By maximizing faculty effectiveness through the Direct Student-Faculty Interaction Model and providing individual support for both teachers and students through the other three models, BYU seeks to develop a distance education approach that lessens the quality or quantity quagmire (i.e., interactivity versus scalability). In a study entitled “Internet-Based Distance Education,” Shea and Lewis (2001) report that students’ top two needs were quicker feedback and more student-instructor interaction. BYU distance education administrators endorse these findings and are making efforts to address each issue, striving to “have its cake and eat it too.” While continuing the effective Speedback™ system that provides prompt feedback, BYU is piloting a number of models to simultaneously increase interactivity while continuing to identify and study yet other models that promise scalable and cost-effective interaction. Time and further research will reveal whether the increased interactivity is scalable.

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