

Best Practices for Online Business Education

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Résumé de l'article

This integrative review of literature on online educational best practices is intended to provide a quick reference for those interested in designing online business courses and programs. Primarily American in its perspective, this review may be helpful for business schools seeking optimal online course designs that foster quality learning experiences comparable in outcomes to traditional methods. Paramount in this review are the emphases on consistency, cohesiveness, and assessment.

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Best Practices for Online Business Education

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Abstract

This integrative review of literature on online educational best practices is intended to provide a quick reference for those interested in designing online business courses and programs. Primarily American in its perspective, this review may be helpful for business schools seeking optimal online course designs that foster quality learning experiences comparable in outcomes to traditional methods. Paramount in this review is the emphasis on consistency, cohesiveness, and assessment.

Keywords: online business education; online course design

Introduction

The increasing popularity and acceptance of online education as an effective, efficient educational medium create both an opportunity and a threat for a college of business. An extensive body of literature confirms the probable future success of online education and generally supports the educational value of the medium. While debate continues on certain nuances, there is little doubt the medium is here to stay. Therefore, the question is not whether a college of business should pursue online education, but rather, how it should strategically respond to this growing challenge. Existing literature suggests the need to search for pedagogical approaches to online education that improve the quality of student learning, stimulate faculty intellectual growth, and enhance overall academic productivity (Bishop, 2003). According to Rungtusanatham, Ellram, Siferd, and Salik (2004), the “question of how courses and degree programs should be designed for effective delivery via the Internet is a nontrivial concern and challenge” (p. 101).

Recognizing online education’s potential, it is important to identify best practices and establish standards that assure quality, comply with accrediting bodies, support faculty initiatives, and provide business students with a product that leads to a satisfying and wholly worthwhile learning experience. Quality transformation to online education requires participating faculty members and departments to challenge their current teaching roles. According to Fredericksen, Pickett, Pelz, Swan, and Shea (2000), “developing effective on-line instructors and instruction have both technical and instructional aspects that are not necessarily intuitive or analogous to the traditional classroom” (p. 10). If done effectively, faculty can use this opportunity to improve pedagogy, not only online, but in the classroom, as well (Thompson, 2001).

This article organizes a review of notable research findings in the field of online education. It identifies the current status of online education in the United States, recommendations/ standards of U.S. accrediting bodies, anecdotal research, and finally empirical research. Most of the research suggestions are then organized in easy to follow table format, allowing for quick reference. Ultimately, the reviewers establish the substantial potential of online education as an educational medium and argue the need for business educators to approach it with diligence.

Status of Online Education

Analysis of the online education market reveals interesting trends. Although online students comprise a relatively small percentage of the total American higher education market, key indicators show tremendous growth potential (Roach, 2002). A recent study of chief academic officers, financed by the Alfred P. Sloan Foundation, found overall online enrollments for U.S.-based institutions increased from 1.98 million in 2003 to 2.35 million in 2004, an 18.2 percent increase (Sloan Consortium, 2005). This growth rate is similar to the 19.8 percent found from 2001 to 2002 and the 22.9 percent found from 2002 to 2003. These growth rates are between 10 and 20 times the National Center for Education Statistics' (2005) expectations for growth in the entire United States higher education market. Most institutions have accepted online courses as an educational medium. For example, 62.5 percent of institutions that offer traditional undergraduate courses also offer undergraduate courses online (Sloan Consortium). The business discipline in particular has the highest reported levels of penetration, as 43 percent of institutions that offer face-to-face business programs also offer online business programs (Sloan Consortium). Additionally, more than half of institutions believe online education is critical to the long-term strategy of their institution, with 74 percent of public institutions and 41 percent of private institutions agreeing (Sloan Consortium).

To date, it appears that the biggest winners in online education are the propriety institutions, even though they serve a minority of online enrollees (Sloan Consortium, 2005). However, for-profit institutions serve over 20 percent of students in online degree and certificate programs, and because of increasing name recognition and efficiency, will probably continue to make significant in-roads in the market (Roach, 2002). The Sloan survey supports this trend, finding that for-profits continue to have the largest growth in the online education component, and are expecting rates greater than 40 percent, dwarfing the 15 percent expected for public institutions and 22 percent expected for private, non-profits (Sloan Consortium). It is clear, then, that institutions wanting to build or sustain enrollments face nimble and differentiated competition from proprietary institutions.

Popovich and Neel (2005) investigated a broad spectrum of institutional characteristics that relate to online courses and programs at AACSB-accredited business schools. These included such factors as the number of students, faculty qualifications, tuition rates, and length of programs among many others. Their sample of 163 business school deans indicated growth statistics consistent with overall online program results presented earlier: 53 percent offered online business programs, 67 percent indicated retention/ expansion of online programs, 80 percent represented public institutions, and new entrants to this market continued to increase.

Advantages and Disadvantages

The research body on online education is extensive, analyzing multiple facets of the medium. Since the intent of this review is to suggest standardized, best practices, there is no compelling

need to fully develop the tangential literature. We present only a cursory review as a foundation to satisfy our primary intention.

The advantages and disadvantages of online education have been well documented in the literature. The anecdotal advantages include: graduating technically literate students (Chisholm and Carey, 2002), flexibility, ameliorating the projected instructor shortage (Green and Gentemann, 2001), alleviation of overcrowding, reduced spending on construction, bolstering enrollment, large profits, extending the reach of elite universities (Roach, 2002), a more friendly learning environment (Sullivan, 2001), ability to work at one's own pace, reduced bias (Thornton, 1999), possibilities for reusing or reselling course materials (Manzo, 2000), access to the developing world and those geographically isolated (Durden, 2001; Symonds, 2001), reduction in costs associated with technology (Bruno, 1997), minimizing revenue loss due to transfer credits, increasing academic integrity by limiting transfer credits, improving graduation rates, allowing students to work according to their learning style (Benton, 2005), and reduction of costs associated with commuting and more demanding work (Jana, 1999).

The anecdotal disadvantages include: poor quality, lack of name recognition for some for-profits (Symonds, 2001), professor training costs, faculty resistance to change (Arnone, 2002; Manzo, 2000), financial aid constraints (Carnevale 2001; Symonds, 2001), lack of interactivity (Hereford, 2000), skepticism by employers (Carnevale, 2005), difficult medium for subjective course content, (Jana, 1999), online work loads and class size (Roach, 2002), technology gaps (Chisholm and Carey, 2002), high costs of entry (Gagne and Shepherd, 2001), administrative problems (Higgins, 1999), loss of unplanned interaction between faculty and students (Benton, 2005), loss of geographic competitive advantage (Strugatch, 1999), loss of scholarly control, and cannibalization of existing traditional programs (Mangan, 2001).

Accreditation

The process of developing online programs cannot be accomplished without reference to the accrediting bodies. In 2001, the eight U.S. regional accrediting commissions, in an attempt to hold online programs to high standards, collectively created a best practices statement to assist institutions in facilitating online programs. Their goal was to encourage imaginative experimentation, while promoting institutional quality to the highest degree. The commissions recommended five separate components of distance education activities to express the best practices and to provide a self-assessment framework. Standards were then developed by each local region and tend not to be as stringent.

A concise review of these five components might further encourage the need for institutionalized standards. Institutional Context and Commitment assures adequate technical facilities, compliance with copyright laws, appropriate academic oversight, and consistency with mission. Curriculum and Instruction stresses appropriate rigor and breadth for the specific degree, and the participation of academically qualified persons in all decisions. Faculty Support considers workload, compensation, ownership, and training. Student Support focuses on administrative, financial, and technical commitments to the continuation of the program for student completion. Finally, Evaluation and Assessment requires documentation of student achievement, student identification during exams, measures of program effectiveness, and continual self-evaluation (Regional Accrediting Commissions, 2001).

Of particular interest to a college of business is AACSB International's latest accreditation standards. AACSB International's mission is to "advance quality management education

worldwide through accreditation and thought leadership” (AACSB International, *n.d.*). A review of this organization’s Eligibility Procedure and Standards for Business Accreditation (2003) yielded several important insights that must guide the actions of a college of business. Principally, AACSB’s preamble states, “As part of each institution’s effort to prepare its students for future careers, it should provide a total educational experience that emphasizes conceptual reasoning, problem-solving, and preparation for lifelong learning” (2003, p. 2). Sample guidance derived from these procedures and standards follows:

- An institution that uses a variety of educational delivery systems (including electronic) must demonstrate comparable quality of its educational programs.
- The business school’s faculty in aggregate, administrators, and individual faculty share responsibility to ensure adequate student-faculty contact across the learning experiences; continuously improve instructional programs, innovate instructional processes, evaluate instructional effectiveness, and set high expectations for academic achievement (Standard #12).
- Participants and their interactions are at the center of much of what defines quality for higher education in business. The participant standards address quality in the educational process regardless of pedagogy or communication technologies utilized. This process includes maintaining staff for ongoing quality improvement of student support activities, such as academic assistance, academic advising, and career advising (Standard #8).
- Passive learning should not be the sole, or primary, model for collegiate business education. Faculty members’ presentations or lectures, absent of additional interaction, are simply a form of information delivery, not higher education. Programs that are mostly or entirely conducted by distance learning will raise questions about opportunities for students to have appropriate interaction with faculty and other students; the school will have the burden of demonstrating that it provides significant learning interaction opportunities. A learning community is established when constituent groups have opportunities to learn from each other, in an environment that supports free expression and continuous learning.
- Faculty members should develop techniques and styles that engage students and make students responsible for learning goals. Faculty should adopt active learning methodologies and should challenge students by using such pedagogical approaches as problem-based learning, projects, simulations, etc.
- The description of educational attainment (credit hours) may need to be revised for distance learning to be more heavily dependent on demonstration of learning outcomes.

To assist institutions further, AACSB International published “Quality Issues in Distance Learning” (1999). These guidelines were intended not as a “how to” manual, but rather to provide insight on key issues salient to delivery of quality distance learning. Foremost is demonstration of how distance learning contributes to the mission, goals, and objectives of the business school, and how the school’s distance learning approach differs from offerings of other providers. AACSB offers a set of seventeen recommendations that help to ensure quality. These include benchmarking against existing distance learning programs, creating and maintaining the necessary faculty resources for the distance learning program, supplementing content specialists

with curriculum design experts to create appropriate learning experiences, and directing sufficient resources to assessment issues.

The accrediting bodies urge institutions to seriously consider how to offer online courses in an environment that is at least as good as the face-to-face model. Therefore, it is obligatory that course developers first consult the relevant research to identify prescriptions for practice.

Empirical Research

The predominant efforts of researchers in online education have focused on comparing online education to that of the traditional, face-to-face method. This is understandable given the concern about online education as a viable alternative to the traditional classroom. Many studies compare the cognitive learning outcomes of courses taught in both media using statistical tests of final grades, grades on papers, student evaluations, GPAs, test scores, etc. A review of Russell's (2005) "nosignificantdifference" website illustrates this point well; he lists hundreds of studies that applied this standard approach. For example, Dellana, Collins, and West (2000) concluded that online and face-to-face education are equally effective because final scores in their undergraduate management science course were not significantly different. On the other hand, Brown and Liedholm (2002) found that traditional microeconomics students performed better on exams than their online counterparts. Seemingly, one could find sufficient warrant to justify or not justify online education from these kinds of studies. However, although certainly helpful in establishing the medium, there are really only limited insights (in regard to best practice) that can be gained from such efforts, and no one can definitively conclude whether online education is equivalent to or better than the traditional classroom from a learning outcomes perspective. Additionally, striving to make online education as good as face-to-face learning may result in overlooking its distinct potential (Twigg, 2000; McDonald, 2002).

More recent efforts have sought to extend the research base beyond no significant difference (Swan, 2003; Grandzol, Eckerson, and Grandzol, 2004). Studies in this area include gender and age dimensions (Huang, 2002; Colorito, 2001; Nilan, 2000; McGrath, Middleton, and Crissman, 2002), interactivity (Schutte, 1998), and student retention (Vignare, 2003; Stallings, 2002; Hiltz, Coppola, Rotter, Toroff, and Benbunan-Fich, 2000). Swan (2003) reported that online courses may be more supportive of divergent thinking, complex understanding, and reflection because they allow students to explore multiple perspectives in a less intimidating environment. These kinds of studies form a useful knowledge base for institutions as they consider implementing online education.

Perhaps the most useful and powerful studies, though, are the ones dedicated to empirically validating best practices. Many of these studies use education and psychology theories to determine how students best learn in online environments. They can provide clear guidance for structuring and developing more effective online courses.

Recent efforts by some researchers have investigated the emergent field of the psychology of online education (Yan, 2004). These researchers study the science-based psychological factors and processes that may contribute to optimal learning. Researchers in this field assert that traditional learning practices may not be suitable for the online environment because of vast differences in the way knowledge is presented, stored, and delivered (Yan, 2004).

Prominent work in this area by Mayer tested what combinations of multimedia resulted in the greatest transfer of learning (Mayer, 2001; Mayer and Moreno, 1998). For example, Mayer found students learned better when animation was supported by narration, rather than by text. He attributed this to the split-attention effect, which occurs when a cognitive resource becomes

overloaded. When a student is viewing animation and text together, they are using only their visual working memory, and therefore struggle to “split” their attention. In contrast, when a student hears narration with the animation, they are using both their visual and auditory working memories. These findings are consistent with dual coding theory (DCT), which suggests that visual illustrations help increase comprehension and retention by activating mental images in students (Clark and Paivio, 1991). This work has utility for online course design, especially when PowerPoint slides constitute a portion of the course.

Rungtusanatham and colleagues (2004) developed a typology of Web-based business education and raised several design issues. The authors’ purpose was to “help institutions effectively match intended educational goals to the appropriate type of online distance education to pursue” (p. 103). Design issues included whether faculty-driven or design team-driven course developments were more effective. Additionally, they identified three issues that affect the design, delivery, and maintenance of online education. These included content-related (i.e., knowledge depth), delivery-related (i.e., level of student-faculty interactions), and learning-related (i.e., pace of student learning). From these issues, the authors developed their typology for which type of online education best fulfills intended education goals.

Table 1. Types of Online Distance Education

Differentiating Factors	Overview Model	Overview Model with Feedback	Technical-Skills Model	Managerial Learning Model
<i>Content-Related Issues</i> Knowledge Depth	Introductory	Introductory	Skills Competency	Skills Competency & Managerial Decision Making
Content Development Approach	Faculty or Design-Team Driven	Faculty or Design-Team Driven	Design-Team Driven	Design-Team Driven
Content Change Flexibility	Low	Low	Low, but more so than previous two models	High
<i>Delivery Related Issues</i> Interactions Level	None to Limited	Limited	Limited	High
Interactions Flexibility	Low	Low	Low	High
<i>Learning-Related Issues</i> Double-Loop Learning Opportunity	Minimal	Minimal	Average	Maximal
Learning Pace Control	Student or Faculty	Student or Faculty	Student or Faculty	Primarily Faculty

Table 1 provides guidance on best practices in course development. For example, in a typical MBA program, there may be few introductory and rudimentary courses. Instead, most of the courses focus on either skills competency (financial management, etc.) or managerial decision making. For example, the 2003 AACSB International accreditation standards denote that master's level courses should develop such abilities as applying knowledge in new and unfamiliar circumstances. These higher order abilities cannot be accomplished in an introductory course. Therefore, courses developed at the master's level should be design-team driven, not individual faculty-driven, should allow for easy content change, promote high levels of interaction, and the learning pace should be primarily set by the professor. It is essential that these issues are considered when designing courses. Simply posting lecture notes is not sufficient, according to best practice, for teaching more complex, managerial related issues. Live chats, limited class size, and asynchronous discussion boards must be utilized to facilitate the appropriate learning goal.

Essential to the online education experience is what various researchers have termed "community of learners," "knowledge-building communities," "virtual learning communities," or "communities of inquiry." This concept urges course design such that students can contribute to the evolving knowledge base of the group, while developing underlying social networks within their course (Scardamalia and Bereiter, 1996; Lave and Wenger, 1990). Communities of learners are consistent with the assertions of Alexander Astin (1993), a renowned higher education researcher, who found that the quality and quantity of interactions with peers and faculty in both academic and social activities were the most important factors fostering student engagement, a powerful predictor of student success. Therefore, it is essential that online courses are intentionally developed to allow student-to-student interaction and student-to-faculty interaction on both the academic and social levels.

Garrison (2003) identified three structural elements of a community of inquiry. First is cognitive presence, which occurs when critical reflection and discourse are encouraged. To accomplish this, courses must allow for reflective inquiry and self-directed learning. The second element is social presence, which arises when students feel a personal and emotional connection to the subject matter, their professor, and their peers. Finally, teaching presence occurs when the professor creates and ensures the continued functioning of the community of inquiry. Professors accomplish this by designing courses effectively, facilitating discourse, and directing instruction (Shea, Fredericksen, Pickett, and Pelz, 2003). Garrison (2003) asserted that an appropriate balance and integration of the three elements led to effective learning. Therefore, professors must consult best practices that will enable these communities to emerge.

There are several useful summaries of online education best practice. Swan (2003) synthesized several other researchers' work on principles of good habits in undergraduate and online education to arrive at a set of organizing principles for online developers and instructors (Janicki and Liegle, 2001; Chickering and Gamson, 1987).

They include:

- Clear goals and expectations for learners
- Multiple representations of course content
- Frequent opportunities for active learning

- Frequent and constructive feedback
- Flexibility and choice in satisfying course objectives
- Instructor guidance and support

Similarly, Keeton, Sheckley, and Krejci-Griggs (2002) reviewed 20 years of research on educational instruction to develop eight principles of instruction, each with specific strategies that have the largest effects in explaining learning gains. Of import for this topic, these authors are now researching the extent to which faculty use these practices in online environments to aid teaching improvement. Interestingly, results from Phase I of their ongoing study indicate that “the most highly endorsed principles are ones that focused on the processes of learning rather than the assessment of their outcomes” (Keeton, 2004, p. 94). Recognizing the increasing emphasis on assessment, this is clearly an area ripe for improvement.

Anderson, Rourke, Garrison, and Archer (2001) suggested that increased use of teaching presence may lead to more efficacious text-based learning. Teaching presence is “the design, facilitation, and direction of cognitive and social processes for the realization of personally meaningful and educationally worthwhile learning outcomes” (p. 5). Anderson et al., asserted that analyzing the teaching presence components of: 1) instructional design and organization; 2) facilitate discourse; and 3) direct instruction may be helpful in diagnosing teaching difficulties, thereby increasing the quality of faculty messages, and reducing the quantity of online discussion postings. To accomplish this, the authors devised codes that indicate presence of the three components in conference transcripts. For example, identifying areas of agreement and disagreement, seeking consensus, reinforcing student contributions, setting the climate for learning, drawing in participants, and assessing the efficacy of the process are evidence of facilitating discourse. Faculty seeking to improve their teaching presence should consider engaging in these kinds of activities.

The process of developing online courses requires faculty to do more than just try to duplicate the classroom online. Faculty must transform instruction, requiring fundamental rethinking of how to achieve learning objectives given the opportunities and limitations of the online environment (Shea, Pelz, Fredericksen, and Pickett, 2002). Table 2 illustrates a list of best practices developed from various learning theories and research studies. As Hiltz, Zhang, and Turoff asserted, the evidence is overwhelming that online education tends to be as effective, or more effective than traditional delivery. The focus, then, must be on learning which pedagogical techniques work best in the online environment. Each best practice provides positive ways to design and implement online courses to maximize student learning while fostering a community of learners.

Table 2. Online Education Best Practices

	Description of Desired Practice	Author(s)
Course Design & Delivery		
1.	A consistent structure is vital for online success. • This allows students to learn new material without learning a new structure each course. The greater the consistency among course modules, the more satisfaction students had with the course, the more they thought they learned,	Fredericksen, Pickett, Pelz, Swan, & Shea (2000); Shea, Fredericksen, Pickett, & Pelz (2003) Shea, Fredericksen, Pickett, Pelz, & Swan (2001)

	and the more interaction they thought they had with their instructor. Creating consistency is unlikely if faculty are working in isolation, without commonly shared standards. Therefore, standards and best practices should be institutionalized.	Hartman, Dziuban, & Moskal (2000)
2.	Courses should be complete on the day class starts. While this may inhibit spontaneity, it reinforces consistency and allows faculty to concentrate on teaching and participating fully.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
3.	The online environment fosters a teaching style that is learner-centered, instead of teaching-centered. Therefore, redirect time from covering content to facilitating student learning (mentor or coach).	Geith (2003)
4.	Include navigational documents and instructions that specifically tell students where to go and what to do next.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
5.	Match course time commitments to evaluation. For example, if 60% of the course is spent on discussion, why should discussion only count for 25% of the grade? The greater the percentage of the course grade based on discussion, the more satisfied students were, the more they thought they learned from the course, and the more interaction they had with their instructor and peers. The greater the percentage of the course grade based on cooperative or group work, the less students thought they learned from the course.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000) Shea, Fredericksen, Pickett, Pelz, & Swan (2001)
6.	Instructors should add something new every 2-3 days to keep the class moving.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
7.	Keep the course clean of accidental postings and empty documents.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
8.	Use a non-graded icebreaker the first day to foster community and help the students practice chatting.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
9.	Limit the number of hypertext links per page.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
10.	Automate testing and feedback when possible.	Swan (2003)
11.	Online courses that encouraged and rewarded collaboration, but did not require discussion from all students were the most successful.	Holland (2000)
12.	Utilize self-assessments.	Holland (2000)
13.	Give prompt and constructive feedback.	Shea, Fredericksen, Pickett, Pelz, & Swan (2001)

	Because students expect immediate feedback in the online environment, it is essential to establish guidelines on expected turnaround time for answering e-mails, etc. This may help avert unrealistic student expectations regarding response times.	Perreault, Waldman, & Alexander (2002)
14.	Ways to hold a meaningful chat: • Resist the temptation to respond to every student's response • Assign individual students the task of summarizing the discussion • Employ student-led discussion where students devise critical thinking questions • Ask specific students to clarify a point • Ask follow-up questions	Shea, Fredericksen, Pickett, & Pelz (2003)
15.	Use tracking mechanisms to reward reading as well as responding to messages.	Swan (2003)
16.	Encourage divergent thinking skills by using open-ended questions, and modeling encouragement for diverse points of view. Encourage convergent thinking by using activities such as written assignments, one-on-one tutorials, small group collaboration, and self-testing.	Swan (2003)
17.	Develop grading rubrics for participation.	Swan (2003)
18.	Faculty should seek to establish "swift trust" during the first week by establishing a lively and responsive environment.	Hiltz, Arbaugh, Benbunan-Fich, & Shea (2004) Coppola, Hiltz, & Rotter (2002)
19.	Present explanations of animations (such as PowerPoint slides) in spoken form instead of text form. Simultaneously present narration and animation. Narrate in a conversational tone. Allow the learner to have control over the pace of the presentation.	Mayer (2001); Mayer & Moreno (1998); Swan (2004)
Student Services		
20.	Include an orientation to the class, including welcome, contact information, evaluation procedures, etc. The more students can get to know each other and the professor at this point, the greater likelihood that active learning will take place.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000) Benke, Bishop, Thompson, Scarafioti, & Schweber (2004)
21.	Include a student services area that provides administrative reference materials (policies & procedures), degree program reference materials, a student lounge (forum for ad hoc discussions –	Hislop (2000)

	both academic and social). Have faculty participate in these ad hoc discussions, too. Student service center should be comprehensive. Provide a single point of contact for all issues. Have one point of contact for every 200-250 students. Student support is an essential component of online education. Many institutions neglect student support in deference to developing courses and opening them for enrollment. Have a student services section on the WebSite that links to various support resources available at the institution.	Alexander (2005) McGrath, Middleton, & Crissman (2002)
22.	Make human tutors available.	Swan (2003)
Administration		
23.	Establish quality control guidelines that address issues of consistency.	Swan (2003)
24.	Faculty should participate in relevant training before developing online courses.	Donnelli & Klein (2005)
25.	Faculty should consult selected "best-courses" that serve as a model for development.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
26.	Utilize an outside or peer reviewer.	Fredericksen, Pickett, Pelz, Swan, & Shea (2000); Thompson (2003)
27.	Faculty should design online courses more as communication and collaboration environments than as repositories for content.	Dziuban, Hartman, Moskal, Sorg, & Truman (2004)
28.	Build in variety: some students did better with PowerPoint slides while others preferred text outlines. Consider using a cyclic design, whereby each lesson has elements of interest to all learning styles (i.e. text readings, case studies, journals, research projects)	Holland (2000) Danchak (2004)
29.	Be careful using too much multimedia, especially video, because of transfer issues.	Holland (2000)
30.	The maximum number of students faculty believed they could effectively teach online is 25.	Hartman & Truman-Davis (2001)
31.	There are several different ways to organize online courses. Several researchers promote the modular system of curricular design because it builds on concepts of social learning, mental processing, and systems thinking.	Wentling & Park (2001); Fredericksen, Pickett, Pelz, Swan, & Shea (2000)
32.	Utilize "web vets" in trainings.	Hartman, Dziuban, & Moskal (2000)
33.	Faculty saw a 25% time savings in the online environment compared to the traditional environment. However, this excludes the time for course development, which was substantially more in the online environment. To save time and utilize technology's power, one	Waddoups, Hatch, & Butterworth (2003) Bishop (2003)

	can reduce instructor grading time by placing previously hand-graded activities online, reducing the amount of time spent on lecture, and increasing the percentage of time spent on interaction.	
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Conclusions

As evidenced from this review of relevant literature, colleges of business should seek to institutionalize online program and course standards. This will provide the consistency among individual courses that contributes to overall program quality and leads to intended program outcomes. While individual faculty creativity and unique style should not be suppressed, failing to learn from others' experiences and the results of legitimate research inhibits program quality. Course designs should be based on what learning researchers are establishing as most effective. Focusing too intently on creating courses without the end users' learning in mind will most certainly result in less than the desired educational product.

Future research endeavors will likely continue along a path of study similar to that identified in this review. One opportunity that warrants additional investigation is to find if discipline-specific differences in optimal learning strategies and course designs exist. Collaboration among business educators and learning psychologists could produce strategies tailored to the needs of business students. Researchers may also study which design features and strategies contribute the most to such outcomes as student satisfaction, student interaction, faculty satisfaction, and academic achievement. For example, analyzing online course design in the context of dual coding theory may add substantial insight. DCT has been utilized in a variety of educational settings to study the effects of concreteness, imagery, and associative organization on comprehension, retrieval, student achievement, and ratings of teacher and course effectiveness (e.g. Clark and Paivio, 1991; Paivio, Khan, and Begg, 2000; Paivio, 1971; Paivio, Walsh, and Bons, 1994). It, therefore, may provide a theoretical base to pursue further study in this area. Other research endeavors range from individualized course content and assessment to student learning style. These approaches should enable even more targeted solutions. The study of online education has so far been primarily based on the activities and strategies found in the traditional classroom, just in a remote setting. Researchers might investigate alternative methods that more effectively deliver course content by utilizing online learning platforms' unique capabilities. Finally, the authors suggest that convergence of research efforts will further the literature. Researchers should extend their research from simply studying their own unique courses to including various content and design experts that can study the efficacy of entire programs.

This review identified insights from the burgeoning body of research in online education. Certainly, not all research results were included and many more insightful findings will be forthcoming. However, this review identifies and recommends notable findings and will prove valuable for administrators and faculty interested in pursuing online business education. Considering the inevitable growth of online education, the constant need of business employees to "re-tool" in the knowledge society, and the necessity of business programs to offer quality educational experiences, this is a critical and worthwhile endeavor.

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