

# SIMILAR MEDIA ATTRIBUTES LEAD TO SIMILAR LEARNING OUTCOMES

Denise Potosky  
The Pennsylvania State University  
dxp16@psu.edu

## ABSTRACT

*In this paper, a theoretical framework developed for comparing personnel assessment media is applied to the evaluation of various instructional delivery modes. Rather than compare courses or programs according to conventional labels such as “online” or “resident” or “hybrid” instruction, the framework advocates evaluating the transparency, social bandwidth, interactivity, and surveillance available in the media used to facilitate collaboration in the classroom. AACSB Standards and assurance of learning considerations are discussed from the perspective of this framework.*

## INTRODUCTION

Over the past ten years, higher education has observed a proliferation of online courses, degree programs, and even online universities. Any course or degree program seems fair-game for *webinization* so that students from anywhere in the world can “log on” to their courses, work through guided online learning experiences, and demonstrate their learning through online assessments or perhaps exams administered via testing centers. Courses and degree programs offered by business schools are no exception to this trend. The Internet provides an alternative to the face-to-face classroom medium used by business faculty to develop and deliver their lectures, experiential learning exercises, and simulations. Indeed, many business faculty members have been early adopters of web-based technology, and several successful business simulations, games, and experiential exercises have been using the Internet as a platform for interaction for several years now. Part of the reason for this embrace of innovation in business school programs may be attributed to a school’s membership in the Association to Advance Collegiate Schools of Business (AACSB), which has expressed standards for teaching innovation for some time now. For example, Biggs & Gulkus (1988) reported that faculty at AACSB accredited institutions tended to use significantly more simulation and experiential packages than non-accredited members and/or non-member institutions, and that even non-accredited members of AACSB use significantly more packages than non-member institutions. Many business school instructors have grown accustomed to exploring new technologies for teaching as they become available, and online education represents one of the most

compelling new terrains, ready for exploration in the quest to enhance students’ learning experiences.

Aside from the desire to enhance learning and the intrinsic appeal of exploring new learning opportunities, online education expeditions are often begun in an effort to expand business school enrollments in a cost-effective manner. At first, a great deal of web-based education consisted of “porting the classroom—including its less-than-successful ritual, the lecture—to the Internet” (Weigel, 2000, p. 12). As web-based education has progressed, more attention has been paid to better utilizing the technological capabilities of the Internet platform. Yet, the implicit educational goal is usually to expediently create an online classroom that is similar to the onsite classroom: The same learning should be accomplished in either instructional format. That is, the “standard” is what happens in a traditional residential classroom, and every affordable effort is made to encourage instructors to re-create their classrooms online. Yet, traditional teach methods hardly represent a “norm” or “proven standard” (Worley, 2000). Unfortunately, there is so much variation between one onsite classroom and other onsite classrooms, it seems unfair to expect online courses to affix their learning goals to a moving target.

Despite the trend towards online courses in business programs, business schools focused on the assurance of learning standards established by the AACSB may be unsure about how to demonstrate the quality of online courses and degree programs. Skeptics might ask: “What proof is there that learning occurs in the online classroom just as it occurs in the onsite classroom?” Yet, early-adopters of online technology for classroom learning might respond with the following question: “What proof is there that learning in the classroom has been optimized?” But a more fundamental question is “Does the medium of course or program delivery matter in terms of the learning that occurs and how learning can be measured?”

It may be possible to create an online learning experience that is equivalent to an onsite learning experience. It may also be possible to create an online learning experience that is profoundly different from an onsite learning experience, but that produces the same learning outcomes. What is needed, however, is a way to measure students’ learning from their classroom experiences, regardless of the format in which a learning activity, course, or program is offered. Several authors have noted that research on distance education lacks a conceptual framework for examining learners and comparing them to learners in other types of classrooms and programs (IHEP,

1999; Worley, 2000). What is needed is a model that identifies the relevant attributes of any medium of education, including online and onsite instructional approaches.

This paper adapts a new model of media attributes, originally developed by Potosky (in press, 2008) for application to personnel selection and assessment, to online and onsite educational formats currently used in business schools. Suggestions for measuring the assurance of learning in ways consistent with AACSB guidelines within each educational format are outlined. First, AACSB guidelines regarding what comprises “effective learning” are briefly reviewed, with particular attention to any perceivable AACSB accreditation expectations for online business programs. Second, the framework for media attributes is described and discussed in terms of online versus onsite classroom experiences. Some examples are offered to instructors who seek to understand the attributes associated with online media. Finally, recommendations for applying assurance of learning metrics to online courses and programs are provided with the proposed framework in mind.

## **AACSB STANDARDS REGARDING THE ASSURANCE OF LEARNING**

According to AACSB’s “Eligibility Procedures and Standards for Business Accreditation” (Adopted April, 2003, Revised January 31, 2007), the “most effective learning” is presumed to occur in highly interactive educational contexts in which faculty members engage students (p. 58). This interaction is “substantive and substantial” and encompasses not only classroom dialogue but also communication during office hours, via e-mail, and through feedback on student performance (p. 58). It is important to note that AACSB uses the term “interactive” to reflect “interaction” or communication between faculty members and students. As such, an “interactive” learning experience is one that is engaging and active because “the most effective learning takes place when students are involved in their educational experiences” (p. 59). As such, active and interactive mean almost the same thing, and both suggest a quality of the educational experience, not necessarily the means of creating the educational experience. For example, AACSB guidelines on student involvement specifically mention problem-based learning, projects, and simulations as pedagogical approaches that are well-suited to challenge students to meet learning goals.

AACSB acknowledges the availability of new means of instruction and contact between faculty and students, and underscores the importance of developing and preparing faculty to explore these new possibilities: “The pedagogy and delivery mechanisms of higher education also are changing rapidly with the introduction of new technology-mediated and action learning practices. The faculty as a whole should encourage instructional innovation, and administrators should provide professional development opportunities for curricular and course innovation” (p. 58). This quote from the “Standards” is interesting because it

refers to the notion that education is “delivered” to students by faculty. Since interaction is encouraged as a means of engaging students in their own learning process, it may not be appropriate to continue to think about the medium of instruction as a means of “delivery,” but as a means of “interaction.” Despite its encouragement to adopt new interactive teaching methods, AACSB seems somewhat skeptical about “distance education programs,” at least in part because of the assumption that the technology employed may not provide “sufficient interactive components for quality education” (AACSB Standards, 2007, p. 28).

The above statements should not be construed to imply that AACSB will not acknowledge the role of various types of communication media used in business education. Again, AACSB underscores the idea of “learning communities” whether they are constructed through face-to-face interactions or using technology-mediated education. What seems to matter most to AACSB is the effort to assess the learning that occurs within accredited programs, regardless of the medium of interaction for these learning communities. According to AACSB, “Assurance of Learning Standards evaluate how well the school accomplishes the educational aims at the core of its activities” (AACSB Standards, 2007, p. 60). Of course, what students derive from a program of study depends somewhat on what they are able to contribute to it and how the learning process is to be facilitated. AACSB Standards (2007) attempt to articulate expectations regarding different “delivery” modes as follows: “Schools will be expected to describe the amount of effort normally required for the degree. The descriptive characteristics will differ by the pedagogical and delivery characteristics of the degree. Traditional, campus-based, education may be described by contact hours, credit hours, or course equivalencies. Distance learning programs may require other metrics and may depend more heavily on demonstration of the learning outcomes. The school should assist accreditation reviewers by clarifying the delivery modes and the kinds and extent of student effort involved in degree programs” (AACSB Standards, 2007, pp. 71-72).

In a recent article on how business schools have progressed toward meeting AACSB standards regarding the Assurance of Learning, Martell (2007) asks whether certain types or “populations” of students will likely exhibit different levels of achievement of learning goals. Included in prospective comparison groups are distance-learning students versus face-to-face learners. It’s not that differences are presumed to exist, but that few clear models have explained how to determine whether differences exist or how to identify and incorporate best practices from one medium of interaction and learning to another.

## **A MODEL OF THE ATTRIBUTES OF A LEARNING MEDIUM**

In a forthcoming paper, Potosky (in press, 2008) develops a theoretical framework for understanding the means of conducting personnel assessments. In particular,

this paper explains that two measures may share common method variance even if one measure uses one medium (e.g., a web-based survey) and the other used a different medium (e.g., a telephone interview). This is because what these two measures may have in common is not a media label (web-based, telephone), but media attributes. Four media attributes are defined: Transparency, social bandwidth, interactivity, and surveillance (Potosky, in press, 2008). The transparency of a medium refers to the extent to which the medium facilitates a clear or unobstructed communication exchange. Social bandwidth is the number or kinds of social cues included in an assessment exchange using an administration medium. Interactivity is defined as the pace of mutual or reciprocal exchange (i.e., turn-taking) between communicating parties. Note that interactivity, as a rate of exchange, is not the same as “interactive” which is a broader term often used to suggest that people are engaged in a communication process. Surveillance refers to the extent to which an outside party could monitor or intercept the message carried by a medium. Surveillance includes the actual security available in the medium used in a given context, but also the perceived surveillance is also attributed to the medium.

Although this framework was originally proposed to examine the various means for measuring people in organizations (e.g., selection testing, employee attitude surveys, etc.), the media attributes identified in the model can be applied to other communication processes as well. In particular, this perspective on media attributes may be helpful in considering and comparing online and onsite education. That is, education is ultimately a communication process, and any instructional format must employ some means of interaction. This means could be face-to-face, 100% online via the Internet, distance education sent via smart phones, or some combination of instructional media. In fact, a central point of Potosky’s (in press, 2008) model is that the labels assigned to various media matter less than the attributes of the media involved in the exchange. It is also useful to note that whatever medium is used, it has some structural characteristics. The structural differences between one medium and another can be understood as differences in points along some range for each of the four media attributes described above. For example, one onsite course might consistently exhibit a slow pace of exchange between the instructor and students, whereas another onsite classroom might be characterized as having a higher level of interactivity. Whether or not an online course differs from an onsite course in terms of interactivity would depend upon which onsite course is considered.

A second important assumption of Potosky’s (in press, 2008) model, consistent with ideas suggested by Barry and Fulmer (2004) regarding social influence processes, is that media attributes are not decided ahead of time and fixed throughout a communication exchange. Rather, the attributes of a medium can be manipulated during the learning process by the parties involved. This means that assigning the labels currently used to describe educational formats, (e.g., online, hybrid, onsite) may not adequately characterize the nature of the exchange between an

instructor and students while a course is actually happening. Both instructors and students have considerable flexibility to increase or decrease interactivity not only from one class meeting to the next, but *during* each educational “episode.”

## OPTIMIZING MEDIA ATTRIBUTES TOWARD LEARNING GOALS: SOME GUIDELINES FOR EDUCATORS

The simulations, games, and experiential exercises developed by ABSEL members emphasize hands-on learning and collaboration between students and with business faculty. According to AACSB Standards, “faculty members should encourage students to collaborate” (p. 59). This means that students should have the opportunity to interact with other students in collaborative learning endeavors. In the classroom, collaboration is fairly easy to initiate as students are instructed to form discussion groups, engage in activities with a partner or group, and work on team assignments. Yet, some online business programs seem to ignore that it is the shared learning structure that creates collaboration and instead attribute learning to the online medium itself. For example, in Penn State University’s iMBA, offered through its World Campus, “technologies” are assumed to “enhance content and facilitate learning” as student teams interact using web-based tools such as electronic bulletin boards, e-mail, listservs, chat, and Web conferencing (See [http://www.worldcampus.psu.edu/iMBA\\_curriculum.shtml](http://www.worldcampus.psu.edu/iMBA_curriculum.shtml)). But the interaction that is supposed to create collaborative learning is not caused or enhanced by broadly defined “technologies” per se. It cannot be claimed that web conferencing is better, worse, or even different from a face-to-face group meeting. In addition, it is simply not true that instructors in onsite classes or programs do not also use these same technologies. By applying the model outlined earlier, it is possible to bypass the broad “onsite” versus “online” labels and even the particular names for various communication media used in contemporary classrooms. The model can be used to demonstrate that some web-conferencing media are more interactive, use more social bandwidth, have the same amount of perceived surveillance, and maybe have less transparency than a meeting held face-to-face.

Business faculty who want to accomplish course or program-level learning goals might consider the attributes of the media they use to engage students in the learning process. However they interact with students, instructors need to determine the structural level and dynamic variation achieved for each of the four media attributes defined. Is the instructional medium transparent enough? For example, in some sophisticated online class meeting, lecture “notes” are designed to be highly “interactive.” Rather achieving a timely and appropriate rate of exchange among class members, however, “interactive” lessons may actually obstruct the classroom interaction and present a nuisance factor as students work their way through seemingly endless web pages and “clicks.” If an online course requires that

students interact with a computer more than they interact with each other or with the instructor, the online computer medium is not particularly transparent. Learning might suffer in this context. Further, the structural features of the media attributes of an instructional medium may need to vary throughout the term. For example, maybe a less transparent medium is useful near the beginning of the term, as students will be more aware of the medium as they learn how to use it. Yet, after a certain point in the term, it might be better if the instructional medium became more transparent as students and their instructor(s) continued to interact relative to the subject matter of the course. Learning might be enhanced if the dynamic aspects of instructional media are taken into account.

Weigel (2000) points out that the Internet may be better at achieving “reach” than it is “richness.” However, there is considerable variation in the media richness utilized in online courses. This is particularly apparent when one considers the social bandwidth and interactivity of an instructional medium. For example, some online courses resemble electronic textbooks, whereas others truly create an online environment embedded with several different social cues (e.g., real time audio and visual conversation, text with accompanying graphics and modifications using a web-based white board, etc.).

Increased interactivity may be possible with any more student-centered approaches to learning, and this applies to onsite as well as online learning approaches. It is interesting to note that some authors have noted that web-based technology may be better suited to maintaining communities of learning than it is in creating new communities (e.g., Weigel, 2000). It may be that certain cohorts of students establish patterns of interaction and expectations about the pace of this interaction, and the instructional medium must be adaptive to these expectations.

Arbaugh’s (2000) suggested that there may be gender differences in class participation patterns in onsite versus online courses. In particular, women (adult MBA students) participated more via the Internet, and the author suggests that women may have achieved greater rapport with more perceived freedom in asynchronous online discussion than women who were “competing” in face-to-face discussions in the classroom. Another possibility, however, is that perceived surveillance associated with the online medium was lower than in the face-to-face classroom. This idea fits well within the interpretation of the study, but adds that students in some asynchronous online classrooms may be less self-conscious or aware of others’ evaluations of their contributions to the class. In addition to studying individuals’ behaviors in various types of classrooms, it is useful to consider the surveillance attribute of the communication medium employed.

## **MEDIA ATTRIBUTES AND ASSURANCE OF LEARNING**

The proposed framework can be used to help business programs understand the application of AACSB Assurance of Learning measures to various approaches to course and

program delivery. Rather than anticipate that a new approach to instructional delivery will differ from traditional “face-to-face” instruction, it may be more fruitful to consider how media attributes differ from one set of instructional media to the next. For example, in examining the quality of MBA programs, Kretovics and McCambridge (2002) compared “the extent to which student learning was influenced by one of three distinct types of instructional delivery: traditional on-campus, face-to-face (f2f) instruction; distance education (in this case, distribution of video recordings of on-campus classes combined with online faculty/student and student/student interaction), and executive education (f2f, cohort).” It is interesting to note that the broad labels of “traditional on-campus,” “distance education” and “executive education” are claimed to be “distinct” types of instructional delivery.

When the media attributes for each type of instruction are examined and compared, the programs may not be so different from each other. Research that has compared courses delivered in different formats has found few significant differences in learning (Arbaugh, 2000; Worley, 2000). When comparing whole programs, Kretovics and McCambridge (2002) reported that distance students showed significantly greater mean differences on two of the twelve learning outcome measures. Of course, this means that 10 out of twelve learning outcomes measures did not differ from one instructional approach to the other. Rather than compare instructional approaches defined by the characteristics of the students in the program (e.g., whether or not students came to campus for class), it would be interesting to compare what could be different about one educational medium to the next. The distance education program described by Kretovics and McCambridge (2002) sounds like it incorporated more social cues (i.e., more social bandwidth), but it is difficult to discern whether the courses in each program differed along the other media attributes defined by Potosky (in press, 2008). Maybe the accomplishment of learning outcomes did not vary much from one program to the next because the media used in each program, though not identical, was very similar in terms of transparency, interactivity, and (perceived) surveillance.

Not all studies have exhibited similarities across onsite versus online classes, however. For example, Ponzurick, France, & Logar (2000) found that MBA students in a marketing course were least satisfied with a distance education format that included Internet access, telephone, fax, and e-mail technologies, as compared to students who met in face-to-face class meetings. It may be that despite the instructors’ efforts to equalize course content across the different sections using different types of media, the attributes of the media differed in important ways. The distance format entailed “delivery” of content rather than the creation of an engaging learning environment. Arbaugh (2000) noted the importance of student involvement and participation in online learning environments. Calling a web-based learning platform a communication tool does not make it so. What makes a medium useful in communication is not its label, but its use.

Several authors have noted that the medium used to create a learning environment matters less than the pedagogy and facilitation of collaboration toward learning outcomes established by a faculty member (e.g., Ponzurick, France, & Logar, 2000; Worley, 2000). Education is a process of communication, not a transfer of information from instructors to students (Weigel, 2000). AACSB's Standards regarding the Assurance of Learning reinforce this idea that learning occurs through collaboration and the construction of communities. The communication medium employed to accomplish learning goals matters only to the extent that the medium facilitates this interaction.

## CONCLUSION

This paper applied a theoretical framework developed for comparing personnel assessment media to the evaluation of various instructional delivery modes, and suggested that comparisons based upon four media attributes may help to move research, practice, and assurance of learning measurement beyond conventional labels applied to the way instructors and students are able to interact and learn. For example, calling a course "online" because students meet 100 percent via the Internet does not help to equate one online learning experience to the next, lumping together courses that meet anywhere from 10 to 90 percent online as "hybrid" courses seems arbitrary, and assuming that onsite courses do not use web-based technology at all is naïve. Research has searched for differences between onsite and online learning despite the fact that variation within these two classifications of instructional approaches is potentially enormous. The proposed framework of media attributes provides a more systematic approach to examining the instructional media used in the classroom, any classroom, anywhere. Measures of learning that endeavor to compare one course or program to another can take into account differences in transparency, social bandwidth, interactivity, and surveillance available in the media used to facilitate collaboration in the classroom. Doing so provides a meaningful basis for comparing the learning outcomes associated with courses and programs.

## REFERENCES

Arbaugh, J. B. (2000). Virtual classroom versus physical classroom: An exploratory study of class discussion patterns and student learning in an asynchronous Internet-based MBA course. *Journal of Management Education* 24, 213 – 233.

Association to Advance Collegiate Schools of Business (AACSB) International. (2007). *Eligibility Procedures and Accreditation Standards for Business Accreditation*. [Electronic version]. Retrieved November 10, 2007, from [http://www.aacsb.edu/accreditation/process/documents/AACSB\\_STANDARDS\\_Revised\\_Jan07.pdf](http://www.aacsb.edu/accreditation/process/documents/AACSB_STANDARDS_Revised_Jan07.pdf).

Barry, B. & Fulmer, I. S. 2004. The medium and the message: The adaptive used of communication media

in dynamic influence. *The Academy of Management Review*, 29: 272-292.

Biggs, W. D., & Gulkus, S. P. (1988). Innovation in management education: The impact of the AACSB. *Developments in Business Simulation & Experiential Exercises*, 15, 87-92.

Institute for Higher Education Policy (1999). What's the difference: A review of contemporary research on the effectiveness of distance learning in higher education [Online]. Washington, DC. Available: [www.ihep.com/PUB.htm](http://www.ihep.com/PUB.htm).

Kretovics, M., & McCambridge, J. (2002). Measuring MBA Student Learning: Does Distance Make a Difference? *The International Review of Research in Open and Distance Learning*, Vol 3, No 2 (2002), ISSN: 1492-3831 [Electronic journal]. Retrieved November 10, 2007, from <http://www.irrodl.org/index.php/irrodl/article/view/108/188>.

Ponzurick, T., France, K. R., and Logar, C. (2000). Delivering Graduate Marketing Education: An analysis of face-to-face versus distance education. *Journal of Marketing Education* 22(3), 180 – 187.

Potosky, D. (In press, 2008). A conceptual framework for the role of administration medium in the personnel assessment process. *Academy of Management Review*.

Weigel, V. (2000). E-learning and the tradeoff between richness and reach in higher education. *Change* 32(5) 10 – 15.

Worley, R. B. (2000). The medium is not the message. *Business Communication Quarterly*, 63(3), 93–106.