

## Online Task Force Report

### Task Force Charge

The Task Force was charged by Phil Vandermeer and Rojann Alpers to describe the parameters of online education in general and in particular for ASU. The exact charge was as follows:

#### On-line Education Task Force

Academic SOUNDNESS & Academic INTEGRITY will be the guiding principles of this Task Force's inquiry. The overall outcome from this Task Force must be criteria by which reliable, valid and evidence-based decisions can be made and recommended to the UAC/Senate/Assembly/Administration/Students.

Initial work has been completed and a number of issues identified. From these issues, I am asking this Task Force to direct future time, talents, and abilities toward attainment of the following outcomes.

Outcomes:

1. Reference List of STRONG (reliable/valid/ evidence-based) literature that address BEST PRACTICES of on-line teaching/learning/resources/faculty-type (readiness)/student-type (readiness)/quality indicators/standards.
2. Annotated Bibliography of each of the references

BASED ON THE LITERATURE the following documents will be created:

3. A table of criteria to evaluate the *suitability* of specific courses for on-line delivery (within or independent of an entire curriculum (program))
4. A table of criteria by which to evaluate the *quality* of an on-line **course(s)** within or independent of a curriculum
5. A table of resources (time, personnel, materials, training etc.) needed to **develop** an on-line course/curriculum(program)
6. A table of resources (time, personnel, materials, training, etc.) needed to **maintain** an on-line course/curriculum(program)
7. A table of criteria to assess **faculty** readiness/success in an on-line course/curriculum(program)
8. A table of criteria to assess **student** readiness/success in an on-line course/curriculum(program)
9. A template for the development of same-looking platform across all courses/programs

## *Phase One*

The Task Force presented its first report addressing the first two outcomes on November 9, 2009. That report described the extent of online offerings in colleges and universities and also summarized the findings on student learning outcomes.

### Outcomes 1 and 2 Report

## **Background Research on Online Programs**

*Distance Education at Degree-Granting Postsecondary Institutions: 2006-07.* U.S. Department of Education, December 2008. NCES2009-044

- 1 During the 2006-07 AY, 2/3 of 2-year and 4-year degree-granting institutions offered online, hybrid/blended online, or other distance education courses for any audience or level. Sixty-five percent reported offering college-level, credit bearing courses, and 23% reported offering non-credit courses.
- 2 Sixty-one percent of 2-year and 4-year institutions reported offering online courses, 35 percent reported hybrid/blended courses, and 26 reported other types of college-level, credit bearing courses. For those offering online courses, 62 percent reported that the work for those courses was totally online.
- 3 For the year studied, 12.2 million registrants in college-level, credit bearing courses were reported. 77 percent enrolled in online courses, 12 were in hybrid, and 10 percent in other types.
- 4 Thirty-two percent of all institutions reporting offered programs that were designed to be completed through distance education; 29 percent were degree programs.
- 5 Of the 11,200 college level programs, 66 percent were reported as degree program offerings.
- 6 Internet-based technologies were cited as the most widely used technology for instructional delivery.
- 7 The most common factors cited as affecting the decisions to offer online work were meeting student demand for flexible schedule (68 percent), providing access for students who would otherwise not have access (67), making more courses available (46), and seeking to increase enrollment (45).
- 8 Most institutions (94 percent) developed the courses delivered.

*Evaluation of Evidence-Based Practices in Online Learning.* U.S. Department of Education, May 2009.

Questions guiding the study:

1. *How does the effectiveness of online learning compare with that of face-to-face instruction?*
2. *Does supplementing face-to-face instruction with online instruction enhance learning?*

3. *What practices are associated with more effective online learning?*

4. *What conditions influence the effectiveness of online learning?*

#### Summary and Key Findings

- 9 A systematic search of the research literature from 1996 through July 2008 identified more than a thousand empirical studies of online learning. Analysts screened these studies to find those that (a) contrasted an online to a face-to-face condition, (b) measured student learning outcomes, (c) used a rigorous research design, and (d) provided adequate information to calculate an effect size. As a result of this screening, 51 independent effects were identified that could be subjected to meta-analysis. *The meta-analysis found that, on average, students in online learning conditions performed better than those receiving face-to-face instruction.* The difference between student outcomes for online and face-to-face classes—measured as the difference between treatment and control means, divided by the pooled standard deviation—was larger in those studies contrasting conditions that blended elements of online and face-to-face instruction with conditions taught entirely face-to-face. Analysts noted that these blended conditions often included additional learning time and instructional elements not received by students in control conditions. This finding suggests that the positive effects associated with blended learning should not be attributed to the media, per se. An unexpected finding was the small number of rigorous published studies contrasting online and face-to-face learning conditions for K–12 students. In light of this small corpus, caution is required in generalizing to the K–12 population because the results are derived for the most part from studies in other settings (e.g., medical training, higher education).
- 10 *Students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction.* Learning outcomes for students who engaged in online learning exceeded those of students receiving face-to-face instruction, with an average effect size of +0.24 favoring online conditions.<sup>3</sup> The mean difference between online and face-to-face conditions across the 51 contrasts is statistically significant at the  $p < .01$  level.<sup>4</sup> Interpretations of this result, however, should take into consideration the fact that online and face-to-face conditions generally differed on multiple dimensions, including the amount of time that learners spent on task. The advantages observed for online learning conditions therefore may be the product of aspects of those treatment conditions other than the instructional delivery medium per se.
- 11 *Instruction combining online and face-to-face elements had a larger advantage relative to purely face-to-face instruction than did purely online instruction.* The mean effect size in studies comparing blended with face-to-face instruction was +0.35,  $p < .001$ . This effect size is larger than that for studies comparing purely online and purely face-to-face conditions, which had an average effect size of +0.14,  $p < .05$ . An important issue to keep in mind in reviewing these findings is that many studies did not attempt to equate (a) all the curriculum materials, (b) aspects of pedagogy and (c) learning time in the treatment and control conditions. Indeed, some authors asserted that it would be impossible to have done so. Hence, the observed advantage for online learning in general, and blended learning conditions in particular, is not necessarily rooted in the media used per se and may reflect differences in content, pedagogy and learning time.
- 12 *Studies in which learners in the online condition spent more time on task than students in the face-to-face condition found a greater benefit for online learning.* The mean effect size for studies with more time spent by online learners was +0.46 compared with +0.19 for studies in which the learners in the face-to-face condition spent as much time or more on task ( $Q = 3.88$ ,  $p < .05$ ).<sup>6</sup>
- 13 *Most of the variations in the way in which different studies implemented online learning did not affect student learning outcomes significantly.* Analysts examined 13 online learning practices as

potential sources of variation in the effectiveness of online learning compared with face-to-face instruction. Of those variables, (a) the use of a blended rather than a purely online approach and (b) the expansion of time on task for online learners were the only statistically significant influences on effectiveness. The other 11 online learning practice variables that were analyzed did not affect student learning significantly. However, the relatively small number of studies contrasting learning outcomes for online and face-to-face instruction that included information about any specific aspect of implementation impeded efforts to identify online instructional practices that affect learning outcomes.

- 14 *The effectiveness of online learning approaches appears quite broad across different content and learner types.* Online learning appeared to be an effective option for both undergraduates (mean effect of +0.35,  $p < .001$ ) and for graduate students and professionals (+0.17,  $p < .05$ ) in a wide range of academic and professional studies. Though positive, the mean effect size is not significant for the seven contrasts involving K–12 students, but the number of K–12 studies is too small to warrant much confidence in the mean effect estimate for this learner group. Three of the K–12 studies had significant effects favoring a blended learning condition, one had a significant negative effect favoring face-to-face instruction, and three contrasts did not attain statistical significance. The test for learner type as a moderator variable was non-significant. No significant differences in effectiveness were found that related to the subject of instruction.

- *Effect sizes were larger for studies in which the online and face-to-face conditions varied in terms of curriculum materials and aspects of instructional approach in addition to the medium of instruction.* Analysts examined the characteristics of the studies in the meta-analysis to ascertain whether features of the studies' methodologies could account for obtained effects. Six methodological variables were tested as potential moderators: (a) sample size, (b) type of knowledge tested, (c) strength of study design, (d) unit of assignment to condition, (e) instructor equivalence across conditions, and (f) equivalence of curriculum and instructional approach across conditions. Only equivalence of curriculum and instruction emerged as a significant moderator variable ( $Q = 5.40$ ,  $p < .05$ ). Studies in which analysts judged the curriculum and instruction to be identical or almost identical in online and face-to-face conditions had smaller effects than those studies where the two conditions varied in terms of multiple aspects of instruction (+0.20 compared with +0.42, respectively). Instruction could differ in terms of the way activities were organized (for example as group work in one condition and independent work in another) or in the inclusion of instructional resources (such as a simulation or instructor lectures) in one condition but not the other.

The narrative review of experimental and quasi-experimental studies contrasting different online learning practices found that the majority of available studies suggest the following:

- 1 *Blended and purely online learning conditions implemented within a single study generally result in similar student learning outcomes.* When a study contrasts blended and purely online conditions, student learning is usually comparable across the two conditions.
- 2 *Elements such as video or online quizzes do not appear to influence the amount that students learn in online classes.* The research does not support the use of some frequently recommended online learning practices. Inclusion of more media in an online application does not appear to enhance learning. The practice of providing online quizzes does not seem to be more effective than other tactics such as assigning homework.
- 3 *Online learning can be enhanced by giving learners control of their interactions*

*Online learning can be enhanced by giving learners control of their interactions with media and prompting learner reflection.* Studies indicate that manipulations that trigger learner activity or learner reflection and self-monitoring of understanding are effective when students pursue online learning as individuals.

*Providing guidance for learning for groups of students appears less successful than does using such mechanisms with individual learners.* When groups of students are learning together online, support mechanisms such as guiding questions generally influence the way students interact, but not the amount

they learn.

### **Conclusions of the Meta-Analysis**

In recent experimental and quasi-experimental studies contrasting blends of online and face-to-face instruction with conventional face-to-face classes, blended instruction has been more effective, providing a rationale for the effort required to design and implement blended approaches. Even when used by itself, online learning appears to offer a modest advantage over conventional classroom instruction.

However, several caveats are in order: Despite what appears to be strong support for online learning applications, the studies in this meta-analysis do not demonstrate that online learning is superior as a *medium*. In many of the studies showing an advantage for online learning, *the online and classroom conditions differed in terms of time spent, curriculum and pedagogy*. It was the *combination* of elements in the treatment conditions (which was likely to have included additional learning time and materials as well as additional opportunities for collaboration) that produced the observed learning advantages. At the same time, one should note that online learning is much more conducive to the expansion of learning time than is face-to-face instruction.

In addition, although the types of research designs used by the studies in the meta-analysis were strong (i.e., experimental or controlled quasi-experimental), many of the studies suffered from weaknesses such as small sample sizes; failure to report retention rates for students in the conditions being contrasted; and, in many cases, potential bias stemming from the authors' dual roles as experimenters and instructors.

Finally, the great majority of estimated effect sizes in the meta-analysis are for undergraduate and older students, not elementary or secondary learners. Although this meta-analysis did not find a significant effect by learner type, when learners' age groups are considered separately, the mean effect size is significantly positive for undergraduate and other older learners but not for K-12 students.

*Task Force Note: While there is some debate about the methods used by the NCES researchers, this report reflects the most reliable data available. The consistency and interpretation of that data is consistent with other data sets analyzed by NCES.*

In order to address outcomes 3-10 the Task Force met with Dr. Mernoy Harrison and then Dr. Phil Regier, both of whom had leadership responsibilities for ASU Online development.

Many of the Task Force members were early adopters of online courses, and they encouraged the Task Force to address both the efforts of ASUOnline and of those faculty members who were developing courses or programs without being involved in ASUOnline efforts. Where feasible, the outcomes are presented collectively with notation make on distinctions.

### *Phase Two*

Phase 2 of the On-line Task Force 2009-2010 charge is to develop templates for faculty to use in evaluating their own readiness to build and manage on-line offerings; appropriate and necessary student characteristics that will support satisfaction and success in an on-line learning environments; types of course content and expectations that are most compatible with on-line delivery and, and resources and workload expectations that will be needed to drive true quality on-line courses and programs.

### Assumptions

Based on the meta-analysis provided by the U.S. Department of Education, the Task Force accepts the research findings on the effectiveness of online education as a guiding principle. However, there remain questions and concerns about individual student readiness for online delivery that seem not to be

addressed sufficiently in the reports. Nonetheless, moving on from that point, the Task Force makes the following assumptions about online delivery of the curriculum at ASU:

- 1) Programs selected by the dean of ASUOnline for development and delivery will have a solid market need documented. Given that the costs to develop a totally online program are extensive in actual costs as well as forgone opportunities, the Task Force assumes that the marketing information used to select programs for ASUOnline employs methods acceptable to the faculty sponsoring the program.
- 2) Above all, degree unit faculty must be involved in decisions about courses and programs for which they are responsible under terms of faculty governance. They determine the outcomes for the program and for individual courses. They must approve choices made by course designers, with each side be sensitive to the other's perspectives.
- 3) Although faculty involved in developing the ASUOnline programs will be supported in that development, the Task Force assumes colleges will also support faculty who wish to develop online courses or programs that are not being developed by ASUOnline.
- 4) Students accepted into online programs must be advised about student responsibility for learning in the online environment. In turn, rich resources for student success will be provided students enrolled in online programs, including but not limited to, adequate library support, tutoring and other academic success support, and strong advisor oversight on academic progress. The Task Force understands that ASUOnline is devoting significant resources to developing web-based student support.
- 5) Faculty wishing to put programs online can confer with the dean of ASUOnline at any time to discuss possibilities, including financial issues.

#### Design Considerations

Online programs cannot simply be transferred from face-to-face delivery to online delivery. Some new courses will never have been taught at ASU before being delivered online. Therefore, both faculty and courses developers will need guidelines on how to prepare the most engaging courses to produce student learning.

Currently, ASUOnline uses Quality Matters as its design template. Quality Matters (QM) is a faculty-centered, peer review process designed to certify the quality of online courses and online components. It can also be used as template for decisions about course and faculty readiness for online delivery. <http://qminstitute.org/home/Public%20Library/About%20QM/RubricStandards2008-2010.pdf>

QM is a good starting point for quality assurance, but ASU needs to go beyond these guidelines and take ownership of its own design parameters and academic integrity measures. Currently, in addition to built-ins in the CMS such as lock-down browser and timed release, ASUOnline must secure testing sites for students should faculty not wish to assess student learning over the web. These testing opportunities should be made available to students at low or no cost. Faculty should also have access to training on

alternative assessment methods such as projects and portfolios if needed. Additionally, faculty should have access and training in various strategies for academic integrity in the online environment.

Academic Soundness/Suitability for Development

The Task Force was asked to create a table of criteria by which to evaluate the *academic soundness/suitability* of developing an on-line curriculum (program)—either degree or certificate. Such a table might look like this:

	Not demonstrated or known	Known but small sample or little data	Adequate information and data	Convincing information and data provided
Program exists and has history of outcomes, learning activities, and assessments for each course in the program				
Faculty have identified student groups that would benefit from access to online program and determined these students are capable of learning online				
The program addresses a				

workforce need or addresses a stated need as defined by the Regents				
The cost for transitioning the program to online delivery will not compromise faculty workload commitments				
Faculty have expertise and interest in working online as part of their normal workload				

Reference for criteria: Wells (2003), Furnell (2005)

Suitability of Specific Courses for On-line

ASU has the technological capacity to offer most if not all courses online. It is not the technology, but the pedagogy that limits what can be done without a huge resource shift. Wells and Fields (2003) suggest a model for identifying integrating online instruction into existing structures. This model considers the nature of the student body, the level of study, the nature of the unit material, and the nature of the assessment, with three degrees of adaptability. Their table is as follows:

	Band One	Band Two	Band Three
Nature of student body	Immediate post-secondary, mature –age students with low-IT skills	English as a second language	External, interstate, working shifts, ESL, mature-age learners
Level of study	First-year undergraduates, core compulsory , honors	Second-year undergraduate or above	Post graduate, third-year undergraduate or above
Nature of unit material	Requiring physical demonstration, requiring interactive group discussion	Balance of materials requiring interactive group discussion	Primarily written, requiring interactive group discussion
Nature of assessment	Physical resources, experiments, oral communication, interactive assessment, group assessment	Physical resources, experiments, balance of written and oral assessment	Research projects, written assignments, online exam only, group assessment

While the criteria are not cell bound, the general scheme suggests that for band one courses, some information can be provided online without adding to faculty workload. Only courses in band three can operate successfully in a totally online environment without excessive faculty workload issues developing



Criteria for Online Delivery of Specific Courses

The Task Force was also asked to develop criteria for the suitability of specific courses for online delivery either within the online programs or at independent offerings. Historically, any faculty member who had the desire and expertise to develop an individual online course has been encouraged to do so. In most of these cases, support has been provided by the university or the college when requested. It is assumed that that practice will continue although chairs may have input on timeline and resources.

Faculty developing courses for online delivery will have resources available to them should they need to modify learning activities from existing courses translated to online courses. The current state-of-the art for laboratory and practical work, a major stumbling block in converting many course activities to online, is now easily addressed by computer-based simulations and other computer –based technologies that present real world situation virtually (Furnell, xxx). The main issue appears to be whether the appropriate specific practical/lab experience simulation already exists or whether it would need to be developed and at what costs. This is primarily a resource question, not a suitability one. Therefore, the criteria might be as follows:

	Non-existent or insufficient programs available	Resources exist but need supplemental material development	Sufficient resources/programs exist	Excellent programs exist and are self-sustainable
Laboratory software				
Virtual lab space for interactive activities				
Field work software and sites				
Augmented reality				

Criteria for Quality of On-line Course(s)

The Task Force believes that individual faculty units will be engaged in questions of quality for any programs they sponsor or develop. Each discipline has its own professional outcomes and standards. However, the following criteria should be considered when developing and maintaining an online program:

Student and workforce need

Faculty willingness and expertise

Development costs (including purchase of software and course materials provided by publishers)

Sufficient resources available to develop and sustain a program for a specific time

Assessment arrangements in place at time of program launch

Tracking mechanisms in place for profiling users, issues, and outcomes

Schedule for course review and revision as appropriate to course material

Policies in place vis-à-vis faculty workload, institutional support for faculty and students

On-going evaluation of efficiency and effectiveness of course/program

These criteria should be considered through all phases of online delivery work: content creation; student engagement and interaction with university support systems, faculty, and other learners; monitoring; and assessment.

**Resources (time, personnel, materials, training etc.) Needed to Develop an On-line Course/Curriculum(program)**

There is apparently no magic number or list of resources needed to develop courses for online delivery just as no such definitive one exists for face-to-face courses. The ones most discussed in the literature are as follows:

10-16 weeks needed for development

Faculty and staff time and expertise

Technology system requirements and support for developing and maintaining courses

Training and resources available to faculty and design staff

Training and resources available to student support services

Adequate assessment venues and options

Clear and consistent faculty and staff workload guidelines and accountability agreements

Priority or specialized university or college resources such as special help line, etc.

**Resources (time, personnel, materials, training, etc.) Needed to Maintain an On-line Course/Curriculum(program)**

The criteria for maintaining online delivery should be a repeat of those items needed to develop

programs, but there should be an additional emphasis on student tracking and faculty and staff workloads. If the role of the faculty is to be unbundled after course/program development, then there need to be policies in place to adjust resource commitments.

#### Criteria to Assess **Faculty** Readiness/Success in an On-line Course/Curriculum/Program

Individual faculty members can determine their readiness for teaching online. There are various articles and surveys available online to help them think through their readiness. Each faculty member must also assess what resources/training, etc. he/she would need to be successful in the online environment and make those needs part of the accountability in developing the courses/program. Faculty should not be assigned to online teaching because of low productive issues and other performance issues. The online faculty (and programs) should be the best ASU has to offer, not a second or third tier effort.

See annotations for articles related to faculty readiness.

#### Criteria to Assess **Student** Readiness/Success in an On-line Course/Curriculum/Program

There are numerous online surveys that are described as helping students determine if they would be successful in online learning situations. However, in reality, many students choose online programs because of other considerations such as being place bound or having to care for family members or having a job that requires extensive travel. The advisors have a first-responder role as they work with students to try to encourage student responsibility for independent learning and choosing to enroll or not to enroll in online learning. Faculty can also reinforce this, but once students are in classes, faculty have less opportunity to provide guidance. It is hoped that advisors will be well grounded in the student success literature as it applies to the online environment and that online course/programs will have built in tracking mechanism that provide sufficient learning support to ensure success.

See annotations for articles related to student success online.

#### Template for the Development of Same-Looking Platform Across all Courses/Programs

Consistency is often mentioned in the literature as a key factor in student success in the online environment—consistency in assignment due dates, assignment transmittal, and criteria for evaluation as well as similar navigation of course pages. ASU Online has developed a model for courses in Blackboard and allows for some personalization by faculty but it primarily designed to facilitate student navigation in the courses. Some faculty developing their own courses use course designs similar to those used in face-to-face courses. A consistent look and feel across a college's offerings makes the most sense and allows for students to identify as students belonging to that particular college.

The literature suggests that students do better when sections or modules of courses, including navigation icons, are consistent through a courses as well as a total program. Since many students enrolling in online programs at ASU will not be current students and may be first –time postsecondary students, consistency in expectations and navigation should enhance their learning experience.

## Recommendations

- \*Faculty from degree-awarding units be involved in decision to develop and/or offer a program for online students
- \* Faculty should discuss with their chairs the benefits and workload responsibilities including intellectual property agreements associated with online course/program development.
- \* Faculty should identify what resources are available to them to develop courses outside of unit and institutional priority programs
- \*Online classes should be academically structured like any other ASU brand course/class
- \* In determining if a program should go online or be developed online, the amount of existing resources and the necessary faculty expertise time should be considered
- \* A regular faculty member (Tenure, T/T, Lecturer, Instructor) should be included in the design team for online program development
- \* Quality measures that support ASU's commitment to excellence must be followed during development, delivery, and assessment of all online course and program work
- \* New courses and programs being developed for online delivery must go through the same academic committee reviews as other courses/programs
- \* Degree-awarding units should develop a business and marketing plan that reflects return-on-investment for faculty and other resources used to develop and deliver online programs
- \*ASU Online marketing information be used in decisions about development and roll out of online programs

## Additional Resources

Library [libguide.asu.edu/online](http://libguide.asu.edu/online) programs

CLAS Self-subscribe BB site

W.P. Carey <http://onlinelearning.wpcarey.asu.edu>

ASU Online <http://asuonline.asu.edu/faculty-resources>