Policy and Practice Recommendations

(From: Smith, Clark & Blomeyer, 2005, pgs. 71-75. See:
http://blomeyerandclemente.com/Documents/684_REVOnline%20Learning%20Synthesis-11.15.05-ed.pdf)

Recommendations Relating to Student Academic Performance

Academic performance in online high school courses and/or online high schools generally appears to demonstrate academic performance that is at least equivalent to participation in traditional or "face-to-face" courses (Cavanaugh et al., 2004). Findings on academic achievement in the eight synthesized studies are generally inconclusive for reasons discussed as "barriers" to effective research (see page 66). Practitioners seeking guidance in developing and operating online learning programs should consider the following:

- Professional development implemented with the intent of preparing "highly qualified" online teachers appears to have a positive effect on online student performance.

- Online instructional strategies designed to optimize student-student and student-teacher interaction show limited evidence of having a positive impact on students' performance. More rigorous, experimental research needs to be undertaken examining online interaction, with much clearer definitions of cause and effect, before clear and useful findings are possible.

- Online mathematics courses that provide immediate feedback and include visual tools, virtual manipulatives, graphing tools, and computer applications to reduce the cognitive load from computation and calculation apparently enhance students' academic performance. Increasing statewide availability of online mathematics courses having the characteristics discussed in the studies by Cavanaugh et al. (2005), Kleiman et al. (2005), Hughes et al. (2005), and Ferdig, DiPietro, and Papanastasiou (2005) suggest a promising practice offers for broad improvement of mathematics instruction. It would be valuable to implement randomized, "design-based" experimental trials to test this implicit hypothesis.

- Online Algebra I courses pairing a "highly qualified" online teacher with a less-qualified classroom aide (uncertified or enrolled in a certification program) may offer a promising "research-based" instructional intervention that apparently works as well as or arguably better than traditional classroom instruction with a less qualified teacher in equivalent settings with equivalent curriculum. Collateral benefits of this intervention include the mentoring and eventual qualification of new Algebra I teachers and immediately increased capacity within the sponsoring state (Louisiana) to make "highly qualified" teachers available in schools that would not ordinarily have them.

Recommendations Relating to Characteristics of Successful Online Students

The studies reviewed in this synthesis begin to identify and define a constellation of features and student characteristics that show great promise for potentially optimizing students' potential for academic success and optimal performance in online courses.

- At least one valid and reliable predictive assessment is currently available. The ESPRI assessment (Roblyer & Marshall, 2002–2003) has apparent potential for predicting whether new online students will be academically successful. Using predictive assessments to optimize the potential for success with new or first-time students appears to be a promising, research-based best practice.

- Additional preparation of and/or counseling for "first time" online students, for the expressed purpose of supporting the success of students with identifiable characteristics or assessment scores indicating a low probability of online academic success, also appears to be a promising practice.

- Local and state education agencies should begin reporting accountability data describing academic performance in online courses by the five categories guiding disaggregate reporting of achievement by disadvantaged groups, as mandated under No Child Left Behind: major racial or ethnic groups, economically disadvantaged students, limited-English-proficient students, migrant students, and students with disabilities (Blomeyer & Dawson, 2005). This reporting should increase accountability and oversight for performance of disadvantaged students enrolling in online courses, ensure that disadvantaged students receive the support they need to become successful online students, and prevent online courses from becoming unsupported "dumping grounds" for at-risk students.

Recommendations Relating to Qualities of Effective Online Courses

Online high-school courses and "virtual schools" apparently suffer from the perception on the part of educational leaders, educators, and community members that they are in some way "inferior" to traditional instructional models and methods.

- Accountability data documenting the effectiveness of online courses and online schools, with attention paid to standardized measures of achievement that support comparisons of performance to national, state, and regional norms should be collected and made available for public review by all schools with online programs.

- Parties supporting the development and implementation of online learning should contribute to the development and validation of professional standards and guidelines supporting the implementation of highly effective online courses delivering standards-based content.

- Research-based standards for "best practice" supporting online teaching and learning need to be developed, validated, disseminated widely, and made available for public review.

- The instructional models and designs commonly used to develop and implement online courses should be more thoroughly documented and described, so that schools offering online courses (or online schools) can effectively communicate the variety and subtlety of these designs and models to the communities they seek to serve.

- Because discourse and interaction between and among students and teachers in online courses apparently lacks the nonverbal components that accompany spontaneous face-to-

face verbal communications, students and educators should be supported to better understand how opportunities for online interactions can be optimized and enhanced.

Recommendations Relating to
Professional Development for Effective Online Teaching and Learning

All eight studies identify the situated and effective preparation of "highly qualified" online teachers as a crucial element in the implementation of effective online learning programs.

- State education agencies in all 50 states should work toward establishing performance-based qualifications for online teachers and require that all teachers assigned to online high school courses have appropriate subject area teaching certification.

- State education agencies should work toward developing and enforcing performance-based professional requirements for all online teachers.

- Completion of appropriate professional development experiences, based on professionally appropriate standards, should be required before any certified teacher is assigned duties as an online teacher.

- All newly qualified online teachers should be provided with mentoring by an experienced online teacher during their first online teaching assignments.

- The performance of online teachers should be periodically evaluated by supervisors or administrators who are themselves professionally prepared and experienced online teachers.

Recommendations Relating to Challenges of Online Learning

Some of the features and strategies identified in this synthesis may be interpreted as barriers to further diffusion and sustainability of online learning in K–12 educational systems. In particular, there are indications that the strenuous demands of virtual teaching and learning may make participation in online learning programs a relatively undesirable option for some teachers and school administrators.

- K–12 educators (teachers and leaders/administrators) participating in online learning projects must be emotionally prepared to accept and adapt to ongoing changes, including technological changes in hardware systems and changes in curriculum requiring periodic modifications to online courses.

- The loss of visual contact with students seemingly robs online teachers of queuing systems that are seemingly important to some dimensions of interpersonal communication. In particular, efforts should be made to provide additional support systems for online teachers that can help alleviate teachers' perceptions that students' attitudes and "emotional states" are less accessible to them in online learning environments.

- It seems that use of the Internet under circumstances favoring *limited* technology integration may correlate to lower tested reading comprehension. As such, increased

resources should be provided to support teachers in implementing more fully integrated uses of the Internet to support teaching and learning.

- Increased teacher support for student-student collaboration and interactions in online learning environments seemingly increases student engagement and may have a positive impact on academic performance, but it may also show a paradoxical effect on students' perceptions of online teacher engagement and online teachers' perceived emotional commitment and willingness to individualize and meet students' needs. Accordingly, teachers should be supported to develop and maintain communication channels that work to compensate for this apparent emotional "distancing" in online environments where student-student collaboration is a significant instructional strategy.

Recommendations Relating to Online Learning, School Change, and Educational Reform

The institutionalization of e-learning or online learning in America's schools is not *about* establishing online learning as a delivery system "competing with" the traditional K–12 schools. It also is not *about* disseminating new or innovative instructional technologies. Rather, it is essentially about educational improvement, school reform, and improving academic performance in American's high schools.

- Online learning researchers should attend presentations and seminars organized by groups advocating education reform. Individuals and groups interested in online learning should invite advocates for education reform to become involved in the evolving national online learning community (e.g., the North American Council for Online Learning).

- The goals for online learning projects and programs should be intentionally stated in terms of systemic education reform and school improvement.

- The outcomes defined as targets for online learning programs also should be oriented toward school reform and educational improvement.

- Data management systems should be implemented for online learning programs that will fully support comparisons of the academic performance of students between online and traditional settings. If the national online learning community is going to aim high, it needs the assessment capacity to show that it is hitting the mark.

- Online learning data systems also should be designed and implemented with the capacity to disaggregate data according to the five categories for disaggregate reporting of AYP under the No Child Left Behind Act. This step is important to support the case that traditionally disadvantaged students are participating in online learning and can succeed in online learning environments.