

Attributes that Enable a Virtual High School to go to Scale:

Building a Practical Theory that Takes into Account Organizational Resistance to Change

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2007 Virtual School Symposium

“Changing the Course of Education”

November 4-6, 2007

Louisville, Kentucky

The Virtual High School Movement, 1996-2007

- Over a decade in review

Building the airplane while
riding in it



School Redesign and Systemic Change through Online Learning



■ Optimism for Online Learning

- Our nation is demanding system-wide improvement in education
- External providers are being challenged to scale up their reforms
- A need exists for reforms to be implemented more widely, more deeply and more rapidly than in the past
- Public education is being challenged by such mandates as NCLB
- Mandates require that all children have access to the highest quality of education regardless of where they live, their race, or their socioeconomic status



School Redesign and Systemic Change through Online Learning

■ Pessimism for Online Learning

- “Failure to scale up educational interventions was not so much a failure of a theory of how to reproduce success but the absence of a practical theory that takes account of the institutional complexities that operate on changes of practice” (Elmore, 1996) = **Organizational resistance to change**
- This research sought to understand the phenomenal growth in virtual high school education and to determine its capacity for implementing sustainable school redesign and systemic change
= **Ability to go to scale**



Identifying the Attributes

- Comprehensive School Reform Design (1998)
- Rogers (1995) Diffusion of Innovation Meta-Theories
- Leadership Theory: Pisapia (2006)
- Scale Theory: Coburn (2003) and Corcoran (n.d.)



Scaling Up vs. Going to Scale

Scaling Up Implies	Going to Scale Implies
Improvement in the technical core of education in which practice occurs (curriculum, pedagogy, and assessment)	Changes in the professional culture in which the practice occurs (roles, norms, relationships, structures)
Expanded use of a program, practice, or product	Full utilization in a jurisdiction
Increased use of particular policies, programs, and practices	Achieving reform in such a large number of schools and classrooms that the norms of the profession are altered, and the reform practice becomes the new standard
Viewing scale as a marketing problem that requires strategies and incentives to persuade local decision makers and teacher to adopt the reform	Viewing scale as a problem of knowledge development and utilization



Attribute Categories

- The Virtual High School Design
- Communication Channels used to spread the design
- Time
- Effectiveness of the Virtual High School
- Leadership Capabilities



Attribute Checklist

- Attributes that enable a virtual high school to go to scale
- Placement of attributes as either *scaling up* or *going to scale*
- Total of 39 attributes (22 *scaling up* and 17 *going to scale*)
- 7 contextual factors



Methodology

- Correlational study with the three major variables being attributes, contextual factors and dimensions of scale
- **Corcoran's (n.d.) dichotomy of scale** was used to identify attributes as being in one of two levels
- ***Scaling up*** included Coburn's dimensions of **spread** and **depth** and ***Going to scale*** including her dimensions of **sustainability** and **shift in reform ownership**
- Attributes were then placed on one of five mutually exclusive and exhaustive categories
- Content Analysis techniques were used to identify frequencies of attributes and categories
- Only documents where there was a percent agreement of greater than .80 were used in this study



Research Questions

- 1. What are the dimensions of scalability that should be used to identify, quantify, and measure the attributes that enable a virtual high school to go to scale?
- 2. What is the relationship between scaling up attributes and going to scale attributes?
- 3. What percent of variance in the going to scale attributes can be attributed to scaling up attributes *within* and *across* attribute categories?
- 4. Do contextual factors affect the scalability of the virtual high school innovation?



Sampling Procedure

- First Phase:

Documents were selected from a variety of relevant sources:

- eSchool News Online
- NACOL Forum
- Edutopia
- Education Sector
- American School Board Journal
- Other online newspapers

- Sample Size: N=206

- Content Analysis conducted on N=128

- Purposive sampling strategy:

- Only selected documents written after 2000
- Relevance to the virtual high school movement
- Relevance to this study



Sampling Procedure

Second Phase:

- Content analysis conducted on N=142 documents pertaining to five specific virtual high schools
- Document were selected from:
 - Websites
 - Formative and summative evaluations
 - Book chapters
 - Policies and procedures
 - Other relevant documents
- Total of N=270 documents were analyzed



Virtual High Schools



- Florida Virtual School (1997)- State run
<http://www.flvs.net>
- The Virtual High School (1996)-Consortium
<http://www.govhs.org>
- Broward Virtual Education (2001)- District
<http://bved.net>
- Colorado Virtual Academy- Charter
<http://www.covcs.org>
- University of Miami Online High School- Private
<http://www.umohs.org>
- Use the [Codebook Reference Sheet](#) to assign attributes found on website pages



Descriptive Statistics

The attributes in the:

- Design Category received 37% of all the frequencies
- Communication Channels received 19% of all the frequencies
- Time Category received only 4% of all of the frequencies
- Effectiveness Category received 15% of all of the frequencies
- Leadership Capabilities received 26% of all of the frequencies



Summary of Findings

- There were significant positive relationships between *scaling up* and *going to scale* attributes for both the universal set of documents and documents pertaining to the specific five virtual high schools
- Significant positive relationships were found between *scaling up* and *going to scale* attribute *within* all attribute categories with the exception of the Time attributes
- Significant positive relationships between *scaling up* and *going to scale* attributes were found *across* all attribute categories in the universal set of documents
- Contextual factors *did not* significantly moderate the relationship between scaling up and going to scale attributes
- Only the *scaling up* attributes of the Communication Channels and Leadership Capabilities categories contributed significantly to *going to scale* in the models of both the universal set and the specific five virtual high schools
- A predictive model of all *scaling up* attributes and contextual factors predicted 52% of the variance in *going to scale*



Conclusions

- 1. The presence of *scaling up* attributes is related to the ability of a virtual high school to *go to scale*.
- 2. Virtual high schools continue to focus on *scaling up* attributes. This focus is necessary but not sufficient to *go to scale*.
- 3. The design of the virtual high school, the solutions that it offers, and the demand for its use lend itself to be independent of specific contextual factors moderating its adoption, diffusion, implementation, and institutionalization.
- 4. Virtual high schools must (a) offer a quality curriculum aligned to high national/state standards, and (b) create networks with other virtual high school adopters to be able to go to scale.
 - When virtual high schools ensure these two things, regardless of where they are located, we can predict that over half of the time the virtual high school will be able to go to scale.

Limitations



- Did not present the *a priori* categorized attributes and their selected level of scale to a panel of experts for review
- Only two co-raters conducting content analysis
- It is difficult to know whether the documents chosen for analysis in this study were the most relevant and representative of a wide variety of views on virtual education
- Potential for researcher bias in the *a priori* selection of documents.
- *A priori* model may have limited the discovery of any new information because of its very nature
- Data might have been missed due to the fact that the two co-raters did not agree on the attributes and data items
- The five virtual high schools selected for this study may or may not be representative of the population of virtual high schools
- The population of students served by the selected virtual high schools might not be the normal school population and therefore the lack of variability might be attributed to this fact

Implications



- For policy makers:
 - The goals of virtual high schools need to align with the policies and regulations that exist in the political and economic contexts in which they are embedded.
- For virtual high school leaders:
 - Whereas in face-to-face schools and classrooms most leadership procedures have become routine, virtual high schools require attention to a large number of features that are presently far from routine.
- For teachers:
 - The 21st century teacher will need to allow much latitude for new ways of student learning, for affiliation with peers, and work that is meaningful.
 - The job of the 21st century teacher is to design substantive, engaging, and fulfilling work for children.
- For universities:
 - Local universities play a large role in assisting school districts by developing and delivering programs of study that train teachers to successfully integrate technology into the curriculum.
 - Change is necessary on two fronts:
 - Preparatory (pre-service) education of teacher candidates
 - Continuing (in-service) education of those already in the education profession
- For researchers:
 - This research suggests the need for an expanded and refined definition of scale to answer the challenges of identifying usable innovations and to facilitate in their adoption, enactment, and maintenance in school systems.

Online Professional Development for 21st Century Teachers

- North Central Research Educational Laboratory (NCREL) Online Teacher Facilitation Course (OTFC)
 - <http://www.learningpt.org/page.php?pageID=141>
- Quality Matters Program
 - <http://www.qualitymatters.org>
- The Virtual High School
 - <http://www.govhs.org/Pages/ProfDev-Home>
- Public Broadcasting Service (PBS)
 - <http://teacherline.pbs.org/teacherline/welcome.cfm>
- Intel Teach to the Future
 - <http://www.intel.com/education/teach/us/>
- Florida Digital Educator Program
 - <http://etc.usf.edu/fde/>





Final Thought:

- The development of a practical theory such as one described by Elmore must include both *scaling up* (space filling) and *going to scale* (space clearing) attributes in order for an educational intervention such as the virtual high school to go to scale.