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Virtual Education in Rhode Island's K-12 Public Schools: Current Status and Perceptions of Administrators

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Purpose of the Study

The purpose of this study was to investigate the nature and extent of virtual education implementation in Rhode Island's K-12 public schools, and to explore the school administrators' perceived importance of and barriers to implementation of distance learning in their schools. The study also explored if there were differences in the perceptions of administrators based on location and school structure. In 2009, Rhode Island Commissioner of Education Deborah A. Gist announced a statewide reform agenda that included establishing a statewide virtual high school (Projo.com, 2009). Unlike traditional education, administrators seeking resources to aide in virtual program formulation will find a scarcity of research in the K-12 levels (Barbour & Reeves, 2009; Cavanaugh, Barbour, & Clark, 2009; Picciano & Seaman, 2009; Tankersley, 2006). This study was designed to assist in the RIDE implementation of virtual education and to address the gap in resources available to Rhode Island's K-12 school administrators.

Framework

The rapid growth of online and virtual learning for our nation's students has been encouraged by numerous governmental, private, and public organizations including the US Department of Education (USDOE). The USDOE National Education Technology Plan encourages states, districts, and schools to provide every student with access to online-learning opportunities and to develop criteria for earning credit through e-learning that mirrors the criteria for earning course credits in local schools (USDOE, 2009). Fueling the expansion is the belief that

virtual education may provide solutions to issues such as overcrowding in schools and teaching shortages (Cavanaugh & Clark, 2007), accommodating individualized learning for advanced and remedial students (Cavanaugh & Clark; Picciano & Seaman, 2009; Setzer & Lewis, 2005; Tankersley, 2006), and providing opportunities for students that are not available in their schools (Picciano & Seaman; Setzer & Lewis; Tankersley). Yet, elementary and secondary school administrators have expressed concerns about policies, quality of curriculum and instruction, and funding for virtual education programs (Collins, 2004). Validation for these concerns is provided in research which found that the establishment of virtual education programs has outpaced empirical evidence regarding policies, managerial oversight, curriculum, and professional development in the online environment (Cavanaugh, Barbour, & Clark, 2009; DePietro et al., 2008). Additionally, school administrators are expected to be educational leaders as well as managers (Hunt, 2008; Levine, 2005) who directly impact the success of their schools (Darling-Hammond, 2000); thus, when constructing a virtual education system to be used by public school students, it is critically important to understand and address the issues and concerns of public school administrators.

Methodology

Sample

A survey of $N = 29$ K-12 public school administrators represented 60% of the school districts in Rhode Island which included urban ($n = 6$), urban-ring ($n = 5$), suburban ($n = 15$), and rural ($n = 3$) districts comprised of both charter ($n = 5$)

and non-charter ($n = 24$) schools. Follow up focus-group interviews were conducted at $n = 1$ suburban and $n = 1$ urban districts. The administrators completed the Rhode Island Virtual Education Questionnaire through an online survey site via a web-link provided in an email invitation. Follow-up focus group interviews were conducted at $n = 1$ urban and $n = 1$ suburban districts which indicated they were offering fully online virtual education courses within their district.

Instrumentation

    Dimensions. The Rhode Island Virtual Education Questionnaire used categorical and Likert-type scale response items adapted from a similar, public-domain study by Setzer and Lewis (2005). The questionnaire consisted of 32 items: 2 demographic items, 3 informational items to determine the nature of distance learning currently offered, at what levels and to what extent they were offered, 26 items addressing the administrator's perceived importance of virtual education (10 items), and perceived barriers to (16 items) virtual education implementation in their district and 1 open-ended question for comments. The 26 items related to perceived importance of and barriers to implementation were aligned to the themes that emerged from the literature: policies and management, curriculum and instruction, and funding.

    Response Format. The survey instrument provided the participant with matrices of course categories (required, elective, remedial/credit recovery, advanced placement, or college-level) across three different delivery methods (fully online, blended/hybrid, or web-facilitated) for the elementary, middle, and

secondary levels. A space was also provided for participants to list other choices. The extent to which the fully online, blended/hybrid and web-facilitated courses were offered was collected in a Likert-type scale ranging from 1 = *Not at All*, 2 = *Minor Extent*, 3= *Moderate Extent*, to 4= *Major Extent*. Perceived importance listed statements to which participants responded utilizing a five-point Likert-type scale of 1 = *Unimportant*, 2 = *Little Importance*, 3 = *Moderately Important*, 4 = *Important* and 5 = *Very Important*. A similarly designed list of statements with Likert-type scale ratings was used for participants to rank perceived barriers: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Undecided*, 4 = *Somewhat Agree* and 5 = *Strongly Agree*. Space was provided in each question for other categories or comments the participant wished to include.

Validity and Reliability. Content validity was supported through the literature and through the judgment of experts of Setzer and Lewis (2005) who initially developed the public-domain survey instrument from which this study's questionnaire was developed, and through a local review by two school administrators ($n = 2$) and one technology expert ($n = 1$). Construct validity was established in previous studies by Setzer and Lewis (2005) and Tankersley (2005).

Internal consistency reliability alpha was reported for multi-dimensional, Likert-type scale responses (Huck, 2008; Gliem & Gliem, 2003) used for the 10 items related to *Perceived Importance*, which yielded an acceptable reliability of .80, and the 16 items related to *Perceived Barriers*, which yielded a good

reliability of .88. As suggested by Gliem and Gliem (2003), the scale means, variances, and alpha if the item was deleted were also reported.

Data Analysis

   Descriptive statistics related to demographic questions included frequencies, percents, means, and standard deviations. Dependent variables for extent of virtual education curriculum delivery methods, *Perceived Importance* and *Perceived Barriers* to implementation of virtual education with respect to enrollment status (charter, non-charter) and metropolitan status (urban, urban-ring, suburban, rural) were analyzed through a series of t-tests or ANOVAs. Measures of significance and effect sizes were examined in order to determine the relationship of the quantitative variables (Creswell, 2003). The Bonferonni adjustment technique was applied to multi-dimensional items when determining levels of statistical significance.

   The audio-recordings of the phase 2 interviews were transcribed by the researcher; data units were identified and coded by themes posed by the questions, themes that were frequently mentioned by the interviewees, and new themes that emerged during the course of the discussion (Rubin & Rubin, 2005). The themes from both interviews were compared and grouped together for reporting relevant to four primary themes: Implications for Reform and Growth of Distance Learning, Implementation, Curriculum and Instruction, and Funding. Subcategories of themes were created and connected to the survey instrument questions and overall research questions.

Results

Nature of Online Courses Offered

A total of $n = 18$ districts indicated that they offer courses that are fully online, which was the primary type of course districts offered in distance education programs. A total of 62% of the districts ($n = 18$) reported offering fully online courses: 45% for remediation or credit recovery ($n = 13$), 38% for elective courses ($n = 11$), 21% for required courses ($n = 6$), and 21% for Advanced Placement courses ($n = 6$). A total of 28% of the districted reported offering courses listed as Blended/Hybrid for purposes of elective courses (7%, $n = 2$) and courses for remediation and/or credit recovery (21%, $n = 6$). No district reported offering Blended/Hybrid courses for required courses, Advanced Placement, or college credit. Although the types of Web-Facilitated courses offered were more diverse than Blended/Hybrid courses, Web-Facilitated courses are currently offered by only 10% of the districts ($n = 3$), making it the least utilized form of distance education reported. The Venn diagram in Figure 1 clarifies the overlap in districts by depicting the number of districts that offer more than one type of distance learning delivery method. Of the $n = 18$ districts offering fully-online courses, $n = 3$ districts also offer blended/hybrid courses, and $n = 3$ districts offer all three methods of delivery. Of the $n = 7$ districts offering blended/hybrid courses, only $n = 1$ district offers strictly blended/hybrid courses. All districts ($n = 3$) offering web-facilitated courses also offer both blended/hybrid and fully-online courses.
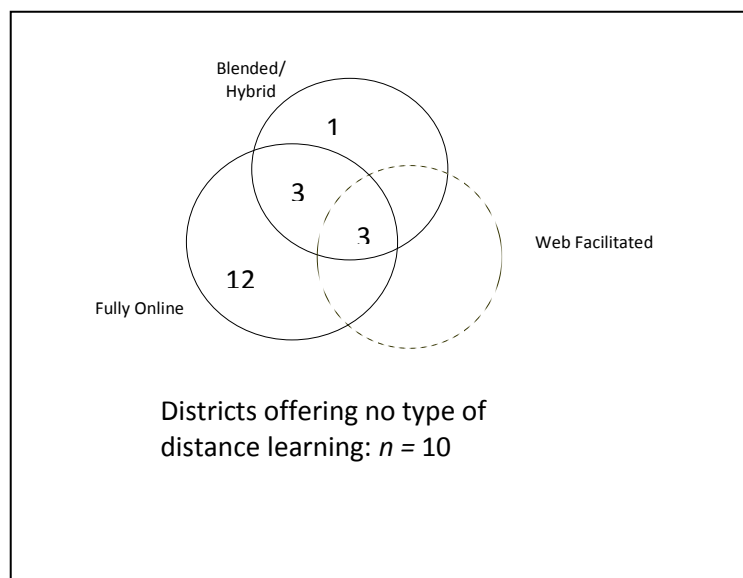
Figure 1. Disaggregated Number of Distance Education Courses

Of the *n* = 18 districts offering fully online courses, 94% (*n* = 17) offer high

school courses, 17% (*n* = 3) offer middle school courses and 6% (*n* = 1) offers

elementary level courses. All of the blended/hybrid (*n* = 8) and web-facilitated

(*n* = 3) courses are offered only at the high school level.

Extent of Online Courses Offered

A total of *n* = 10 districts offer no distance education courses – some of those

districts chose *Not at All* on the scale while others left that section blank after

having indicated they offer no distance education courses on the instrument.

The data indicate that no district reported creating virtual education curriculum

within their own districts, and only *n* = 1 district reported obtaining curriculum

from another school district. A total of *n* = 2 districts reported obtaining

curriculum from state virtual schools in other states, however, only to a *Minor*

Extent. Independent vendors were reported as the curriculum source for 33% of

the districts (*n* = 9) to a *Major Extent*, 11% of the districts (*n* = 3) to a *Moderate*

Extent and 22% of the districts (*n* = 6) to a *Minor Extent.*

Perceived Importance of Online Education

The mean (± *SD*) of the response counts indicated highest scale values on the dimensions of permitting students who fail a course to take it again ($M = 3.86 \pm 1.28$), offering courses not otherwise available ($M = 3.83 \pm 1.40$), meeting the needs of specific students ($M = 3.74 \pm 1.36$), and offering advanced placement or college-level courses ($M = 3.14 \pm 1.39$). The lowest scale values were associated with increased enrollments ($M = 1.70 \pm 1.13$), meeting federal or state technology guidelines ($M = 1.81 \pm 1.12$), and funding issues ($M = 1.86 \pm 1.36$).

Five of the course categories corresponded to four dimensions on question 4 of the survey instrument as outlined in Figure 2.
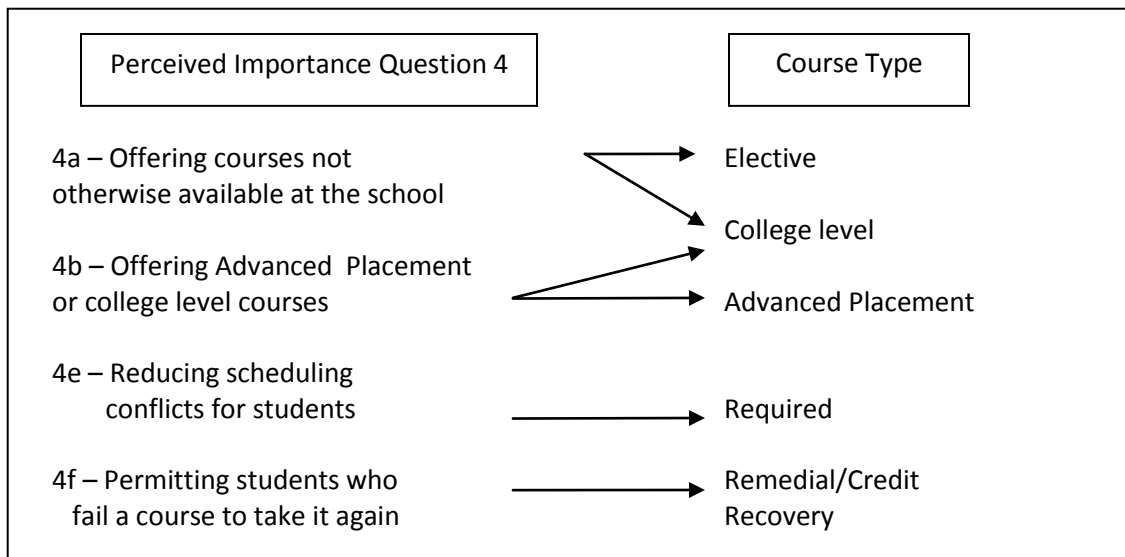

Figure 2. Mapping of Question in Survey Instrument Related to Course Type

The participants who responded *Important* or *Very Important* on the questions shown in Figure 2 were isolated from the participants responding *Unimportant* to *Moderately Important* in order to determine if the districts' current level of implementation was consistent with their perceptions about the importance of offering the courses. The results, summarized in Table 1, show that of the $n = 11$

districts with higher ratings of importance of Advanced Placement or college level courses, only 55% of the districts ($n = 6$) currently offer Advanced Placement and 9% of the districts ($n = 1$) currently offer college-credit courses. Of the $n = 16$ districts with higher ratings of importance for "offering courses not otherwise available at the school", 63% of the districts ($n = 10$) currently offered on-line elective courses and 38% of the districts ($n = 6$) currently offer Advanced Placement courses online. Of the $n = 5$ districts with higher ratings for the importance of reducing scheduling conflicts for students, 40% of the districts ($n = 2$) are offering distance education for required courses, and of the $n = 14$ districts with higher ratings for the importance of permitting students who fail a course to retake it, 100% of the districts ($n = 15$) are currently offering remedial or credit recovery distance education courses.

Table 1

Number of Districts Perceiving Course as Important or Very Important Which Also Currently Offer the Course

Source	Rating of *Important* or *Very Important*	Related Course	Currently Offer the Course	
	N		n	%
4a – Offering courses not otherwise available at the school.	16	Elective	10	63
		College level	6	38
4b - Offering Advanced Placement or college level courses.	11	Advanced Placement	6	55
		College level	1	9
4e – Reducing scheduling conflicts for students.	5	Required	2	40
4f – Permitting students who fail a course to take it again.	15	Remedial or Credit Recovery	15	100

Note. Rating scale for questions: *Unimportant*, *Little Importance*, *Moderately Important*, *Important* and *Very Important*.

Qualitative results of the interviews yielded results directly related to questions "Offering courses not otherwise available in the district" (question 4a) and "Offering Advanced Placement or college-level courses" (question 4b). For example, both districts interviewed referenced using virtual education courses to replace traditional courses that were eliminated due to low enrollment numbers in the course. Due to small numbers of students seeking to enroll in some AP courses, a suburban administrator noted that students sometimes "get thrown into" large enrollment courses to fill out their schedule even though "they really don't want it". Virtual education provided an alternative to accommodate student choice of courses.

Perceived Barriers

Highest mean values were found on questions related to course development and/or purchasing costs ($M = 4.06$), lack of other sources of funding ($M = 3.59$) and the lack of grants to pay for programs ($M = 3.23$). Least mean values occurred for the slow pace of implementation ($M = 2.38$), restrictions caused by federal, state or local laws or policies ($M = 2.32$) and funding based on student attendance in distance education courses ($M = 2.29$).

A suburban, non-charter respondant addressed "Organizational resistance to change" (question 5f), by stating, "The union is currently supporting the online environments as long as the courses offered are for remedial work or are courses the school does not offer. The union is worried that virtual learning expansion will take jobs from the current membership."

The comments related to question 5f were also prevalent in the qualitative interviews. A suburban non-charter superintendent, in discussing interactions with the local teacher's association, stated, "We did get pushed back in terms of 'You're taking jobs.' and, 'Why are you doing this?'...So you have that whole piece which I think is very difficult." Another interview participant stated, "As a teacher, you know you're a union member and I don't see it as a threat to teaching positions because the offerings are things we withdrew. It's only enriching, further enriching, what we're offering – they're not replacing the adults". Unlike the open-ended responses in the survey instrument which spoke of organizational resistance strictly in terms of a barrier, the interviewees provided more depth regarding the potential of losing traditional teaching positions to online courses by speaking of it in terms of transformation as opposed to loss.

Differences Based on Location and School Structure

ANOVAs and t-tests results showed no statistically significant differences among localities or between charter and non-charter schools on any of the dimensions pertaining to extent to which online courses are offered, the perceived importance of offering courses, or perceived barriers to offering online courses when the p-values were adjusted using the Bonferonni adjustment technique. The t-test results for charter and non-charter schools regarding perceived barriers in Table 2 presents that several dimensions were found to have p-values $<=.05$, which could be considered statistically significant differences without regard to the Bonferroni adjustment $(.05 \div 16 = .003)$

requiring significance differences to be determined at the .003 level. Although

the requirement for statistical significance was not met, it was noteworthy that

consistent "trends" were observed for higher means in the non-charter school

Likert-type scale ratings perceptions of barriers to implementation with regards to

organizational resistance to change, slow pace of implementation, lack of shared

vision, lack of strategic planning for distance education within the district, and

convincing stakeholders of benefits.

Table 2

t-Test Difference Between Charter Status with Respect to Perceived Barriers to Implementation of Virtual Education Courses in Each District (N = 29)

Source	Charter		Non-Charter				
	M	SD	M	SD	F	t	p
Organizational resistance to change (5f)	1.00	0.00	3.17	1.28	11.14	-3.284	**.004**
Slow pace of implementation (5g)	1.25	.50	2.67	.97	2.99	-2.800	**.011**
Lack of shared vision (5h)	1.25	.50	3.22	1.21	6.99	-3.023	**.007**
Lack of strategic planning for distance education within the district (5i)	1.25	.50	2.94	1.11	4.46	-2.943	**.008**
Difficulty in convincing stakeholders of benefits (5o)	1.50	1.00	3.22	1.06	.362	-2.963	**.008**
Lack of support staff necessary to develop courses (5p)	2.50	1.92	3.22	1.22	1.91	-.972	.342

Note. Response scale was as follows: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Undecided*, 4 = *Agree*, 5 = *Strongly Agree*. Using the Bonferroni adjustment (.05 ÷ 16 = .003) a significance level of .003 was required for statistical significance.

Several open ended responses received support the findings in Table 2. In

addition to comments related to individual survey questions, the question

allowing for overall comments yielded $n = 15$ responses from $n = 4$ urban, $n = 3$

urban-ring, $n = 6$ suburban, and $n = 2$ rural districts representing $n = 12$ non-

charter and $n = 3$ charter districts. Interaction with collective bargaining units was listed as a barrier by a non-charter urban administrator, with the participant stating that the "union contends that this is their bargaining unit of work". A non-charter suburban school administrator wrote, "The union is currently supporting the online environments as long as the courses offered are for remedial work or are courses the school does not offer. The union is worried that virtual learning expansion will take jobs from the current membership."

Summary of Major Findings

1. Of the districts responding to the survey, 62% reported offering some form of fully online course, 94% of which are offered at the high school level.

2. The most common forms of fully online courses currently offered in Rhode Island school districts are for remediation or credit recovery (45%). This was consistent with the finding of the most important for offering online courses as "permitting student who fail a courses to retake it"; furthermore, of districts rating this category as Important or Very Important, 100% currently offer online courses for remediation or credit recovery.

3. Online courses for Advanced Placement or College-level courses perceived by administrators as *Important* or *Very Important* were inconsistent with the level of offering: 55% currently offer AP courses online and 9% offer college-level courses online. However, the 38% of the $n = 16$ districts who responded Important or Very Important to "offering courses not available" at their school could have included college-level courses in that category along with electives.

4. Issues most highly rated as perceived barriers to implementation of distance of a virtual education program were course development and/or purchasing costs, the lack of other sources of funding, and the lack of grants.

5. There were no statistically significant differences among metropolitan areas or between charter and non-charter districts with respect to sources of virtual education course curriculum, or with respect to perceived importance of offering virtual learning courses; however, consistent "trends" were observed for higher means in the non-charter school ratings of perceptions of barriers to implementation with regards to organizational resistance to change, slow pace of implementation, lack of shared vision, lack of strategic planning for distance education within the district, and convincing stakeholders of benefits.

Educational Implications

The findings from the study indicate that many districts have already begun to offer online and blended/hybrid courses for their students, but those courses do not yet fully encompass the needs of all students who are seeking courses for purposes other than remediation or credit recovery. There exists a discrepancy between the types of courses which districts report as important and what is actually offered; although districts perceive that enrichment, Advanced Placement, elective, and college-credit courses are important, most have only implemented courses for remediation and/or credit recovery. In the questionnaire comments and follow-up interviews, districts expressed a strong

desire to expand their programs, but said they need assistance with

management, course development and funding in order to realize their goals for

distance education. Non-charter school districts may need more assistance in

addressing issues such as organizational resistance to change, convincing

stakeholders of the benefits of change, and strategic planning needed to

implement the changes. In 2001 Jason Ohler, director of the educational

technology program at the University of Alaska Southeast, wrote an article titled

A Buyer's Market: Education in the New Economy in which he contended that

the customization and convenience provided by virtual education is transforming

education into a "buyer's market". For the first time in educational history, he

argued, students have educational options unconfined by geography that will

spur competition between local and online education providers and that local

schools will need to become consumer friendly in order to survive in this

competitive marketplace. The findings of this study suggest that public school

administrators view online education not as competition, but rather as a valuable

resource in their efforts to provide a quality, comprehensive educational system.

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