An International Survey

of Coordinators
in K-12 Schools
Implementing
Curriculum Videoconferencing

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Research Timeline

2004: Qualitative study of online class of coordinators

2006: USDA RUS Grant Implementation

Spring 2007: Coordinator Survey Development and Pilot Data Collected

Summer 2007: Beginning of Leadership PhD Program; Start of Literature Review

April 2008: Proposal Approved

May 2008: Data Collected

Fall 2008: Data Analysis and Dissertation Writing

Research Background

- Schools are using videoconferencing to connect to content providers, peers and international classrooms.
- Some schools equipment sits collecting dust.
- The videoconference coordinator is key to the implementation in the school.

Problem

The role of the coordinator and factors affecting their ability to support curriculum videoconferencing in relationship to the utilization of videoconferencing in the school have not been thoroughly studied. The focus of this study is the videoconference coordinator and their influence on the utilization of videoconferencing.

Research Design: Ex Post Facto

- Independent variable cannot be manipulated or has already occurred (total use of videoconferencing)
- Demonstrate relationships only, not causation.

Population and Participants

- Videoconference coordinators from 5 listservs internationally
- Survey response: 310 participants in 8 countries, 33 U.S. states
  - 33 cases missing utilization scores
- Final participants: 277 participants in 6 countries, 31 U.S. states

Instrument

- Online Zoomerang survey
- Demographic and support variables
- K12 Curriculum Videoconferencing Implementation Scale
  - Developed from 2004-2006 qualitative study
  - Piloted spring 2007

A Word on Methodologists

Dr. Kijai “quantitative”

Likert scale only

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree

Dr. Newman “qualitative”

Comfort level with videoconferencing

- I enjoy VC as an instructional tool in the curriculum.
- I am gaining a sense of confidence in using VC in the curriculum.
- I am currently trying to learn the basics. I am sometimes frustrated with VC.
- I am anxious about using videoconferencing.

Also Dr. Dennis Rudy who helped me develop the scale.

Scale Validity & Reliability

- Expert judge validity: five judges
- Content validity: table of specifications
- Cronbach's alpha for reliability: .851 on 25 items
- Test-retest reliability: strong correlation (r=.950, *p*=.000, n=19).

Research Hypotheses

There is a significant relationship between **the demographic and support** variables and the school's utilization of videoconferencing.

1. School demographics
2. Coordinator demographics
3. Regional educational service agency
4. Administrative, financial and technical support

Research Hypotheses

There is a significant relationship between **the scale** variables and the school's utilization of videoconferencing.

5. Technical aspects
6. Coordinators' ability to support VC
7. Coordinators' ability to integrate VC in the curriculum
8. Coordinator's ability to work with teachers
9. Coordinator's perception of teacher attitudes towards videoconferencing
10. Coordinator's perception of principal support of videoconferencing

Research Hypotheses

11. A combination of these variables can be used to **predict** the utilization of videoconferencing.

Utilization Variables (2007-2008 school year)

- Total videoconference events / number of students in the school
- Total student events / number of students in the school
- Percent of teachers who used videoconferencing

- Sum: Total Utilization Score

Demographic Variables

School Demographics (School level, number of teachers & students, population, NSLP score, racial makeup)

Coordinator Demographics (Gender, race, age, level of education, country, job title, years of education experience, years of VC experience, time to support VC, hours of VC training, type of training)

Support Variables

- Regional Educational Service Agency Support (ESA support, ESA facilitates VCs, ESA subsidizes VCs, percent of VCs provided by ESA)
- Technology Aspects (Location of equipment, satisfaction with equipment, reason for location)
- Administrative Support (School spent on VC programming, grant funding, grant amount, available technical support, speed of technical support, hours spent at work and at home supporting VC)

Scale Variables

K12 Curriculum Videoconferencing Implementation Full Scale and Subscales

1. Technical quality of VC
2. Coordinator's ability to support VC
3. Coordinator's ability to integrate VC in the curriculum
4. Coordinator's ability to work with teachers
5. Coordinator's perception of teacher attitudes towards VC
6. Coordinator's perception of principal support of videoconferencing

Statistical Analysis

- Descriptives for each variable set
- Factor analysis on scale components
- Correlations for each hypothesis
- Multiple regression analysis for each hypothesis
- Cross validation of final regression prediction

Conclusions: School Demographics

- The **elementary** schools were using videoconferencing significantly more than the average of the other levels (*r*=.280, *p*=.000).
- The **high schools** used videoconferencing less (*r*=-.194, *p*=.001), and where the **coordinators support all levels** the schools used videoconferencing less (*r*=-.202, *p*=.001).
- “Other” ethnicity uses videoconferencing more (*r*=.202, *p*=.001).

Prediction model includes significant predictors of High School (-34.40), All Levels (-38.29), “Other” Ethnicity (28.59) and Population (-8.03).

Conclusions: Coordinator Demographics

Variables that correlated **positively** with usage:

- female (r=.152, p=.012)
- 2 years of college (r=.223, p=.000)
- coordinators from Canada (r=.158, p=.008)
- job title as paraprofessional (r=.220, p=.000)
- job title as teacher (r=.155, p=.010).

Conclusions: Coordinator Demographics

Variables that correlated **negatively** with usage:

- coordinator's age (r=.142, p=.023)
- Masters (r=-.154, p=.011) or PhD level (r=-.126, p=.036)
- coordinators from the United States (r=-.196, p=.001)
- job title as technology specialist titles (r=-.144, p=.016)
- years of experience in education (r=-.130, p=.032)
- years of experience with videoconferencing (r=-.154, p=.010),
- mostly technical training received (r=-.121, p=.044)
- "other" for time to support videoconferencing (r=-.132, p=.028).

Prediction model includes significant predictors of 2 year degree (+35.45), female (+19.21), U.S. (-53.79), full time coordinator (40.78), part time coordinator (21.48), "on top of regular job" variables (20.84).

Conclusions: Educational Service Agency

The only variable of these that was correlated to the school's use of videoconferencing was the ESA **Facilitates** videoconferences for the school (r=.120, p=.046).

- There was a correlation between the variables, however, which shows that ESAs that facilitate videoconferences, also tend to
  - subsidize videoconferences for the schools (r=.383, p=.000)
  - the percent of videoconferences from the ESA is higher for those schools (r=.316, p=.000)

Prediction model includes significant predictors of whether the ESA facilitates videoconferences for the school (+9.58).

Conclusions: Administrative, Financial and Tech Support

None of these variables were significantly correlated to the use of VC: Hours Supporting Videoconferencing At Work, Hours Supporting Videoconferencing at Home, School Spent on Videoconferencing, Grant Funding, Amount of Grant Funding, Who Supports Who? And Speed of Support.

The locations of the equipment that were significant were a **mobile cart** within one school (positively correlated, r=.151, p=.012) and **multiple systems in multiple locations** (negatively correlated, r=-.136, p=.024).

Prediction model includes significant predictors of Hours Spent Supporting VC at Work (-3.40), Support from Tech at ESA (+67.06).

Conclusions: Scale

The quality of the videoconference was not correlated to the school's use of videoconferencing, but it had a small positive correlation to the teachers' attitudes (r=.152, p=.012).

The coordinator's **ability to work with teachers** (r=.139, p=.021), the coordinator's perception of the **teacher's attitudes** (r=.405, p=.000) and the **principal's support** of videoconferencing (r=.320, p=.000) all correlate positively with the use of VC.

Prediction model includes significant predictors of technical quality of the videoconference (-12.34), the teachers' attitudes towards videoconferencing (+26.56), and the principal's support of videoconferencing (+7.53).

Final Prediction Model

School demographic variables of elementary, ethnicity.

Coordinator demographic variables of female, 2 year degree, paraprofessional, teacher, tech specialist, yrs experience with VC, mostly tech training, time to support VC (other)

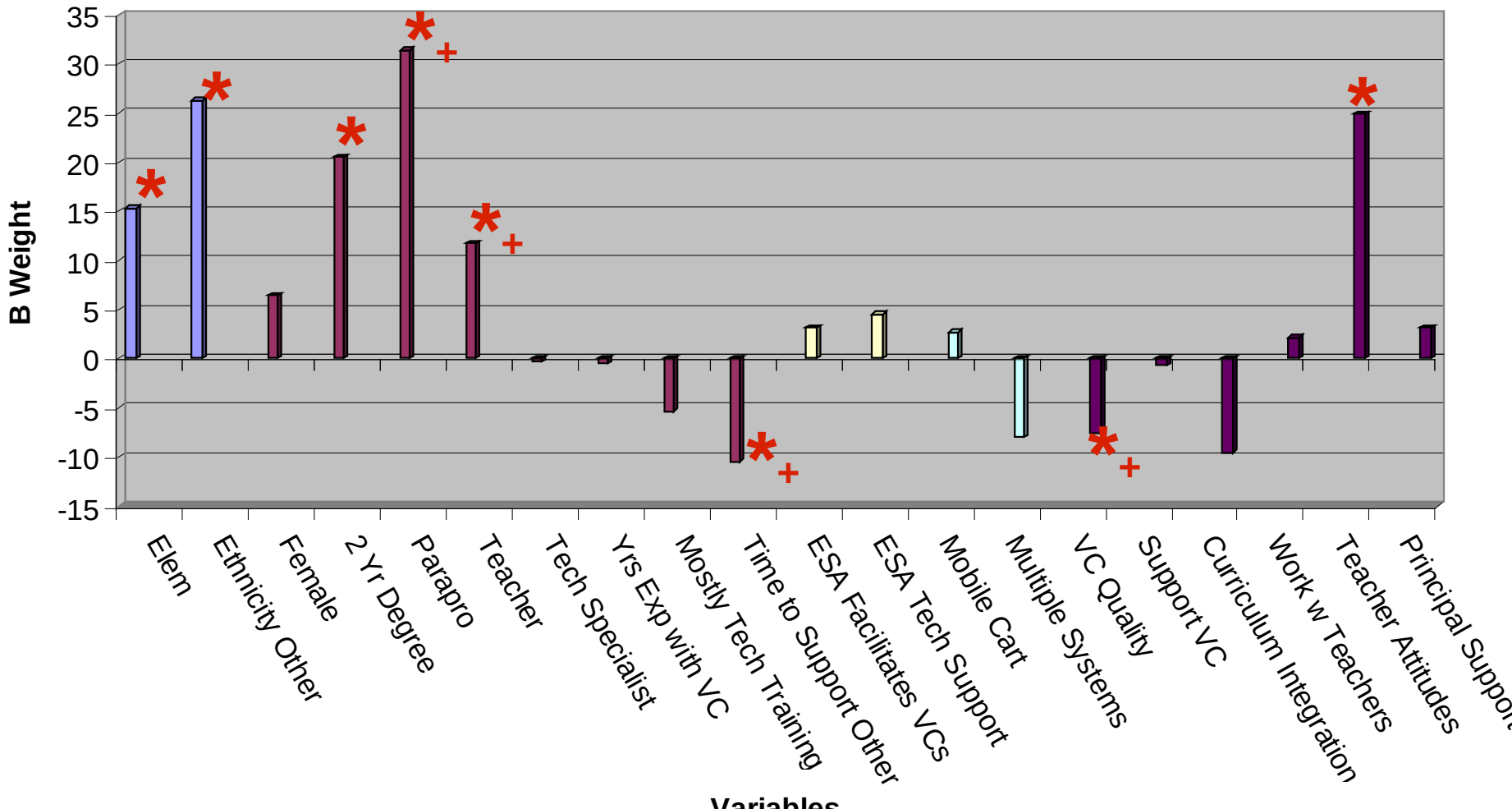
ESA variables: Facilitating content for schools, Support by ESA Tech

Admin variables: Location mobile, location multiple systems

Subscale variables: all six subscales

Prediction model includes significant predictors of elementary (+15.27), other ethnicity (+26.25), 2 years college (+20.54), paraprofessional (+31.41), teacher (11.75), time to support: other (-10.46), VC quality (-7.61), teacher attitudes (24.90).

B Weights of Predictors



Contributions to the Literature

- Development of the K12 Curriculum Videoconferencing Implementation Scale which has good estimates of reliability and validity to predict the usage of videoconferencing
  - With good estimates of reliability, good internal consistency
- A multidimensional perspective can be used to predict the usage of videoconferencing that includes school and coordinator demographics, administrative support variables, and the new K12 Curriculum Videoconferencing Implementation Scale.
  - Stability of the predictor variables shown in cross-validation

Other Major Findings

- A better understanding of the coordinator and school demographics that are related to the use of curriculum videoconferencing
  - Paraprofessional or teacher, training, teacher attitudes and principal support
- The importance and design of educational service agency support
  - Facilitating programming and providing technical support
- The location of the videoconference system
  - Elementary schools with mobile carts
- The surprising finding of the non-significance of some of the administrative variables
  - Time to support and low funding not significant; years of experience and technical quality negatively correlated with usage

Questions?

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