Report on the New Hampshire Public Television Video on Demand Pilot Study

prepared by

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Table of Contents

INTRODUCTION

Background

Today, many educators want to use Internet-based video resources as an integrated part of a lesson and short Internet-based clips rather than entire instructional television programs to enhance instruction in their classroom. Several private providers, such as Discovery Education's unitedstreaming™ (www.unitedstreaming.com) and Chalkwaves (www.chalkwaves.org), offer subscription-based services to digital collections aligned to state standards and a wealth of related multi-media resources for the classroom. Most private products such as these allow for the integration of locally-produced public television content as well.

These private subscription products allow educators to easily search program content by concepts correlated to state standards and choose appropriate clips, between two and 60 minutes long, that support specific lessons. These products also allow educators to find related lesson plans, teacher's guides, sample tests, and still images for use in multi-media projects, charts, graphs, audio files and more. These search features and related resources help educators save precious time in preparing and delivering lessons and give them greater choice in content.

In an attempt to meet the growing interest in video on demand products among educators, public television stations across the country are pursuing a number of content formats and delivery models for video on demand services. Many are in the "pilot phase" and the success and sustainability of such efforts are not known at this time. Stations are in search of long-term, scalable solutions for education that are well integrated into the station's overall digital content strategy and that deploy a variety of strategies to make digital video on demand products available to K-12 educators. The strategies fall into one of the following categories:

- **State-funded or station-funded purchase of a license for a private product such as Chalkwaves and Discovery Education's unitedstreaming™ for a term of one to seven years. Under this strategy, the service is provided to the K-12 schools at no cost.**

- **Privately funded and user-fee based license for a private product. Under this strategy, the service is purchased at a wholesale price from a private vendor and re-sold to the K-12 schools at a retail price.**

- **Station-developed products that build off of existing public television (PTV) content and provide a video on demand service using technologies such as datacasting. This**

kind of service is often spun off into a private venture and is available to schools on a user-fee basis.

Issues Related to Implementation of Video on Demand in the Schools

Recent research by PBS (Public Broadcasting Service, 2003) has identified the following eight fundamental issues public television must first address with respect to the K-12 educational marketplace and the opportunity for digital media services.

1. Recording public television's programming off-air and/or purchasing linear analog video product may be inconvenient for educators, particularly as flexible, on-demand delivery options are introduced to the market.

2. There is insufficient data to determine whether digital technology (including the coveted digital capabilities of public television) would substantially grow demand for digital media (particularly video) in the classroom.

3. Business models predicated on fees to subscribing school districts are high-risk, and the price points are unclear.

4. Despite research that concludes that educators value National Program Service (NPS) content, the fact that many public television stations are financially compensated for distributing ITV services in the classroom rather than NPS, handicaps the opportunity to grow a digitally-based educational service offering.

5. Despite research that concludes educators value NPS content, the perception exists among many stations that the NPS is less educationally-oriented than more formal Instructional Television programming.

6. The disconnected development and (grant) funding within public television (TeacherSource, OnCourse, Teachers' Domain, Chalkwaves, Think Port, Discovery Education's unitedstreaming™ among others) puts the system at risk of fragmentation, significant marketplace confusion and, ultimately, jeopardizes the viability of these services.

7. Competitors such as The Discovery Channel, History Channel, Classroom Connect, and educational publishers are capturing market and mind share in the educational community, while a myriad of public television entities scramble to develop a cohesive plan for the system.

8. Research into K-12 school technology suggests extensive, potentially near-term insurmountable variance across schools systems with respect to end-to-end digital infrastructure. Inadequate IT support and insufficient educator professional development in technology integration present additional impediments to widespread adoption of next generation digital media services.

Even in light of these issues, the study, *Creating Local Value: Early Insights from the Local Service Strategy Project*, conducted by the Corporation for Public Broadcasting **(**Pasnick and Nudell, 2003) concluded that for many moderate public television education providers, incremental expansion using "Turnkey" educational services (educational products that have been developed and are ready for market) may be the best option. Major providers of on-demand "Turnkey" video services include PTV-led Chalkwaves, KERA's Digital Network, and Discovery Education's unitedstreaming™ and digital curriculum service. If the next evolution of education services for PTV stations is in fact in the category of "Turnkey" educational services like those provided by Discovery Education's unitedstreaming™, WGBH's Teachers' Domain, or Chalkwaves, the question for NHPTV remains: ***How should NHPTV proceed given that there is no clear, strong solution evolving from the various PTV video on demand efforts across the country?***

Description of NHPTV's Video on Demand Pilot Study

In order to answer some of the questions posed above and explore a direction for NHPTV in support of video on demand services, NHPTV's Educational Services engaged in a pilot study of NH educators' use of video on demand products from January to June, 2005. Several conditions made a pilot study of the video on demand use in NH schools feasible at this time: Discovery Education was already making available a one-year free license per school district for the unitedstreaming™ product nationally. One hundred and eighty-nine schools in NH were taking advantage of this offer during the 2004-2005 school year. In addition, the Chalkwaves consortium agreed to waive the fees associated with the licenses and hard drives for four pilot school sites and NHPTV for six months during this same time frame.

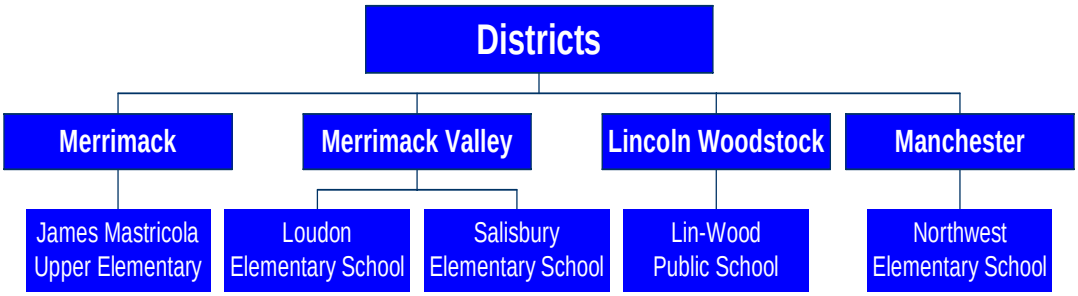
NHPTV designed a pilot study to track and evaluate teachers' and students' experiences in the use of these two video on demand products in four districts in NH. In addition, a statewide internet-based survey was designed and implemented to gather information from teachers at the 189 schools in NH which were taking advantage of the unitedstreaming™ services for one year. NHPTV contracted with an outside evaluator to track the progress of the pilot effort, gather data on the use of these video on demand products in the pilot schools and from educators statewide using unitedstreaming™, and provide information to NHPTV for developing a comprehensive, cohesive, and cost-effective process for supporting video on demand services in NH schools.

(For a further description of the Pilot Study see Appendix 1). The specific goals of this Video on Demand Pilot Study were to:

- examine the use and value of video on demand products,
- determine the level of technical support and professional development needed to fully implement videostreaming in the classroom,
- determine the potential role of NHPTV in supporting video on demand in NH classrooms (e.g., sales, promotion, professional development), and
- develop a sustainable course of action and direction for NHPTV in supporting video on demand use in NH schools.

A school-based pilot was developed by NHPTV staff that engaged two fifth-grade teachers from each of four school districts in NH using either Chalkwaves or unitedstreaming™ as their principal video on demand product in the classroom each week from January 31 to June 3, 2005. Figure 1 illustrates the four districts and schools involved in the pilot study.

Figure 1: Schools and Districts involved in the NHPTV Video on Demand Project



Each of eight pilot teachers from these schools was assigned to use either Chalkwaves or unitedstreaming™ as their primary video product during the pilot study period from January 31 to June 3, 2005. Four teachers were assigned to each product (see Figure 2). Teachers were asked to use and report on the video products each Friday for the 16 weeks of the pilot (February 4 to June 3, 2005) and were paid a stipend of two hundred dollars for their participation. There were some technology problems early on in the use of Chalkwaves on the Apple and Linux-based systems, causing a delay in these schools being able to load and use this product. One of the teachers assigned to use Chalkwaves dropped out of the study due to a combination of elements, including starting late with Chalkwaves, perceived workload issues, and some

difficulties in using the technology. Mac-based systems were in place in Manchester and Merrimack Valley and PC-based systems were in place in Merrimack and Lincoln-Woodstock.

Figure 2: Pilot Teacher Assignments to Video on Demand Products by District and School
(All Fifth Grade Teachers and Fifth Grade Students Involved in Pilot)

Districts Involved in the Pilot Study	Video on Demand Products Assigned by School	
	UNITEDSTREAMING™	CHALKWAVES
Merrimack School District	James Mastricola Upper Elementary School	James Mastricola Upper Elementary School
Lincoln-Woodstock School District	Lin-Wood Public School	Lin-Wood Public School
Merrimack Valley School District	Loudon Elementary School	Salisbury Elementary
Manchester School District	Northwest Elementary School	Northwest Elementary School*

** One teacher discontinued participation after two weeks due to technical difficulties experienced.*

Teachers were asked to track their usage of these two products and to create and apply possible technology integration ideas with video clips for the classroom setting. They submitted weekly logs of their use (See Appendix 2), participated in periodic videoconference check-in sessions with the project director and the evaluator, and responded to a debriefing questionnaire following the completion of the pilot. Classroom observations and student interviews were also conducted in a sample of four pilot districts to determine student's reactions to and satisfaction with the video on demand products that were used in their classroom.

On-site interviews were conducted with superintendents, principals, and technology managers in each of the four districts involved in the pilot study. These interviews were designed to examine the value and usefulness of video on demand services and the extent to which systems were in place and budgets allocated to support the use of these video on demand products in the schools. Both the NHPTV project director and the evaluator conducted these interviews during the month of April. A total of 16 school personnel from the four districts were interviewed for this study. (See interview protocols in Appendices 4 and 5.)

During this same period, eight hundred (800) NH educators statewide, who were taking advantage of the Discovery Education's unitedstreaming™ product offer for a one-year trial period, were invited to participate in an online survey administered by the University of New Hampshire Survey Center. Through this survey, NHPTV sought to understand educators'

perceptions of the use and value of unitedstreaming™ video on demand products. These educators were not a part of the pilot study. (See Statewide Survey in Appendix 6.)

Study Methodology

The design of this pilot evaluation study was qualitative, drawing from several different data sources, such as document reviews, surveys, observations, and interviews to provide similar information from a variety of school and district-based stakeholders. This approach allowed for some triangulation to confirm factual information while ensuring that different points of view were included in the analyses. All data were analyzed using content and other qualitative analyses techniques. Data sources and data collection strategies included the following:

- **Pilot Teachers**
  - ►Pre-Pilot Teacher Survey
  - ►Weekly Teacher Logs on Video on Demand Product Use
  - ►Notes from Videoconference Check-Ins
  - ►Classroom Observations and Interviews
  - ►Pilot Teacher Debriefing Questionnaire
  - ►Student and Teacher Observations

- **Students in the Pilot Schools**
  - ►On-Site Observations
  - ►On-Site Interviews

- **District and School Staff (Superintendents, Principals, Technology Coordinators)**
  - ►On Site Interviews
  - ►School and District Records and Documents

- **Teachers Statewide Using unitedstreaming™**
  - ►Online Questionnaire

Limitations of the Study

In reading and interpreting the findings from this report, several limitations should be kept in mind. First, the findings reported here are drawn from a small sample of potential users of video on demand products in New Hampshire. Given restrictions of time and budget, only four districts were involved in the study. Also, a modest number (19%) of the 800 educators who were provided with the online Statewide Survey responded to the survey. While this response rate is considered typical for *online* survey respondents, no generalizations can be drawn about the use of the products by a wider range of educators in the state. The findings from this study are meant to provide trend data and information to NHPTV to inform their decision-making

processes regarding the support of video on demand products in NH schools. The findings from this pilot effort and some conclusions drawn from the Statewide survey are included in the following pages of this report. It is hoped that these findings and conclusions provide valuable information to NHPTV in pursuing the support of video on demand services in the schools.

Description of Study Participants

Pilot Teachers' Demographics

Seventy-five percent (75%) of the eight teachers engaged in this school-based pilot study were seasoned educators over the age of thirty-five; all pilot study teachers were female. Almost two-thirds (63%) of the teachers in the pilot study were highly experienced educators, having taught for more than 12 years. At the time of the pilot study, only three of the teachers had fewer than 12 years of teaching experience and only one of the teachers was new to the profession, having taught professionally for under one year. All school-based pilot teachers were teaching fifth grade at the time of the pilot and most were responsible for all subject areas, including mathematics, language arts, science and social studies.

Description of Respondents to the Statewide Survey

In May 2005, email messages were sent to 803 NH education professionals identified by Discovery Education as educators taking advantage of the year-long offer to use unitedstreaming™. This email message invited them to participate in the online survey. Thirteen of the email messages were undeliverable, leaving 790 valid email addresses. One hundred forty-seven (147) educators completed the online survey, a response rate of 19%.

Most of the educators who responded to the Video on Demand Pilot Survey were classroom teachers (68%), followed by media specialists/librarians (14%), school or district technology support staff (10%), school or district administrators (2%), and others (6%) which included paraprofessionals and homeschoolers.

About half (49%) of classroom teachers who responded reported teaching fifth through eighth grade, 43% teach ninth through twelfth grade, and 7% teach kindergarten through fourth grade. Forty percent of classroom teachers reported teaching English or language arts, followed by science and social studies that were each taught by 33% of classroom teachers. The least common subjects were arts at 4%, mathematics at 1%, and music at 1%. (See Figure 3.)

In the Statewide Survey sample, 14% of classroom teachers had been teaching less than three years, 34% taught three to nine years, 28% taught 10 to 20 years, and 24% taught more than 21

years. Overall, 25% of educators were male, and 75% female. Sixty-seven percent of administrators were identified as female, as were 80% of technology support staff, 90% of media specialists and librarians, 70% of teachers, and 88% of respondents in the "other" category.

Figure 3: Sample Demographics from Respondents to the Statewide Survey (N=147)

Gender:	
Male	25%
Female	75%
Subject Taught (classroom teachers only):	
English/Language Arts	40%
Science	33%
Social Studies	33%
Mathematics	25%
History	18%
Special Education	8%
World Languages	6%
Arts	4%
ESL	1%
Music	1%
Other	20%
Years teaching (classroom teachers only):	
Less than 3	14%
3 to 9	34%
10 to 20	28%
21 or more	24%
Grades Taught (classroom teachers only):	
K-4	7%
5-8	49%
9-12	43%

FINDINGS

Section I: Use and Value of Video on Demand Products and Services

Pilot Teachers' Use of Video Clips

From February 4 to June 3, 2005 there were 16 opportunities for each of the pilot teachers to submit logs (*one each week for 16 weeks for a total of 112 expected log submissions for the pilot group of teachers*.) [March 4 was school break week.] On occasion, teachers submitted logs indicating that they were unable to use a video clip that week. These non-use submissions were not included in this count. A total of 101 logs on video clip use were submitted by the seven pilot teachers by June 3, representing a 90% usage and response rate. Twenty percent (20%) of the pilot teachers reported that in addition to their assigned product they also used the other unassigned video on demand product (see Figure 4).

Figure 4: Pilot Study Teachers' Use of Video on Demand Product by Type of Product

Video on Demand Products	Number of Logs Submitted by Teachers Only on Primary Product Assigned to Them	Number of Logs Submitted by Teachers Only on Secondary Product (not assigned to them)	Number of Logs Submitted by Teachers Using Both Primary and Secondary Products	Total number of Teacher Logs Submitted Over Course of the Pilot
UNITEDSTREAMING™	52 (76%)	5 (7%)	11 (16%)	68 (67%)
CHALKWAVES	17 (52%)	7 (21%)	9 (27%)	33 (33%)
Total	69 (68%)	12 (12%)	20 (20%)	**101 (100%)**

Pilot Teachers' Use of unitedstreaming™ Video Clips. The four teachers who were assigned to use the unitedstreaming™ product submitted 52 logs on their use of this product alone. These teachers also submitted five logs on their use of Chalkwaves and 11 logs reporting that they had used both their primary-assigned product (unitedstreaming™) and the secondary product (Chalkwaves) during the reporting week.

Pilot Teachers' Use of Chalkwaves Video Clips. Teachers who were assigned to use the **Chalkwaves** product submitted 17 logs on their use of this product. (*Recall that **Clalkwaves** was installed some weeks after the study began and that there were initial technology problems with the installation.)* Teachers assigned to use Chalkwaves also submitted seven logs on the use of unitedstreaming™ video clips and nine submissions indicating that they used both Chalkwaves *and* unitedstreaming™ products during the reporting week.

The pilot teachers' use of the two video-streaming products far exceeded the expectations of the pilot study designers and indicated teachers' enthusiasm for this kind of technology-based instructional tool in the classroom. Pilot teachers demonstrated great diligence and commitment to the pilot study by using the video on demand products and submitting their completed weekly logs in a timely fashion. These log reports were critical to understanding not only teachers' use of the product, but also their various applications of these products; their use of the various product features; their technology and instruction-related barriers, challenges, and successes; and their level of satisfaction as well as the satisfaction level of their students.

Frequency and Type of Video Clips Used by Educators

Video Clips Used by Pilot Study Teachers. The majority of teachers used the video on demand products at least once a week; some used them two or three times a week, depending on the curriculum being covered and their instructional needs. Clip lengths averaged 15 minutes; The range of clip length was broad, and included clips that were around 30 seconds long to those full-length clips of approximately 40 minutes. Mathematics segments used tended to be shorter to illustrate a point, while social studies clips tended to be longer in order to tell a story in its entirety.

Pilot teachers spent a considerable amount of time each week previewing, reviewing, and selecting clips. On teacher logs, the most frequently reported amount of time spent reviewing clips per week was between two to five hours during the course of the pilot (reported 37 times). The next most frequently reported time period for previewing clips was "under one hour." Only one teacher checked "6-10 hours" for one week of the pilot. Pilot teachers reported that due to the amount of time they spent reviewing and using video clips and mastering the technology required, they were unable to explore other features of the products such as: lesson plans, quizzes, blackline masters, NH Standards alignment.

Use of unitedstreaming™ among Statewide Survey Respondents. Forty-seven percent of New Hampshire education professionals, who responded to the statewide survey, reported using unitedstreaming™ once a week or more. An additional 21% used unitedstreaming™ less than once a week (but more than once a month), 18% used the unitedstreaming™ clips about once a month. These respondents indicated that they had used unitedstreaming™ more than any other media for instructional purposes in the past six months.

Educators' Use of Video on Demand Products to Support Instruction and Learning

Use by Teachers in the Pilot Study. Teachers in the pilot study used video clips across a continuum from simply having students view a video clip to integrating segments into parts of a lesson and using additional product features, such as lesson plans and quizzes to enhance instruction. (See Figure 5.) Video clips were most frequently used to set the context for a lesson (70%), introduce a topic, subject, or new vocabulary before or during a lesson (68%), or integrate or enhance a lesson being taught, such as illustrating a point, or reinforcing a concept (58%).

Figure 5: Rank Order of Categories of Video Clip Use in Instruction by Pilot Teachers (N=127)
(Respondents could provide more than one response)

Category and Frequency of Use	Example
Set the context for a lesson (70%)	*Providing a video on pilgrims arriving in the new world and what they encountered before studying the life in the Plymouth Colony.*
Introduce a topic, subject, or new vocabulary before or during a lesson (68%)	*Show students a visual representation of abstract concepts such as sound waves.*
	Learning the names for the various kinds of clouds in weather reporting and seeing these various clouds before beginning a lesson on clouds.
Integrate or enhance a lesson being taught, such as illustrating a point, or reinforcing a concept (58%)	*Embracing the teachable moment by showing a clip of Mt. St. Helen's erupting in the 1980s while studying a unit on volcanoes or to emphasize a current news event.*
	Using short Math clips in a start/pause fashion to allow for teacher explanation or demonstration.
Follow-up on a lesson that has been taught/Review for a test/Further reinforce concepts (52%)	*Showing a video on geometry angles after having studied this in class or Reviewing videos on angles in math in small groups before taking a quiz.*
Provide sources for students' independent or group research and study projects (38%)	*Integrating video clips into a PowerPoint presentation on the WWII for parents' night or Using clips as a resource for student independent research, independent study or small group work.*

Statewide Survey Respondents Reported Use of Video on Demand Clips. Responses from the statewide survey revealed a similar pattern of use as that demonstrated by pilot teachers. The Statewide respondents, however, reported using video clips most often to illustrate a point or enhance or expand on a lesson (60%). Neither the Statewide respondents nor the pilot teachers reported frequent use of the video clips to provide sources for students' independent or group research and study projects (28% and 38% respectively).

Satisfaction with Video on Demand Products

Pilot Teachers' Satisfaction with Video on Demand Products

The overwhelming majority of pilot teachers felt that the videostreaming products met their instructional needs and that they would use these clips again in instruction (see Figure 6). Of the 62 log reports on the use of unitedstreaming™ only three percent (3) included comments that the clips used did not meet their instructional needs or that they would not use the clips again. These negative comments were true of only slightly more of the Chalkwaves users. Five of the logs received (17%) contained negative reports on Chalkwaves video clips. Reasons for disliking the Chalkwaves clips ranged from their technical quality and the length of the clip (too short or too long) to its value in holding students' attention or the appropriateness of the material (too young) for their students' age group.

Figure 6: Pilot Teachers' Satisfaction with VOD Products as Reported on Log Submissions

VOD Products	VOD Product Use as Reported on Pilot Teachers' Log Submissions (N=94)	
	unitedstreaming™	Chalkwaves
Met Instructional Needs and Would Use Clip Again	62 (97%)	25 (83%)
Did Not Meet Instructional Needs/Would Not Use Clip	3 (3%)	5 (17%)

Note: The base number is 94 because not all teachers checked this box on the log summary.

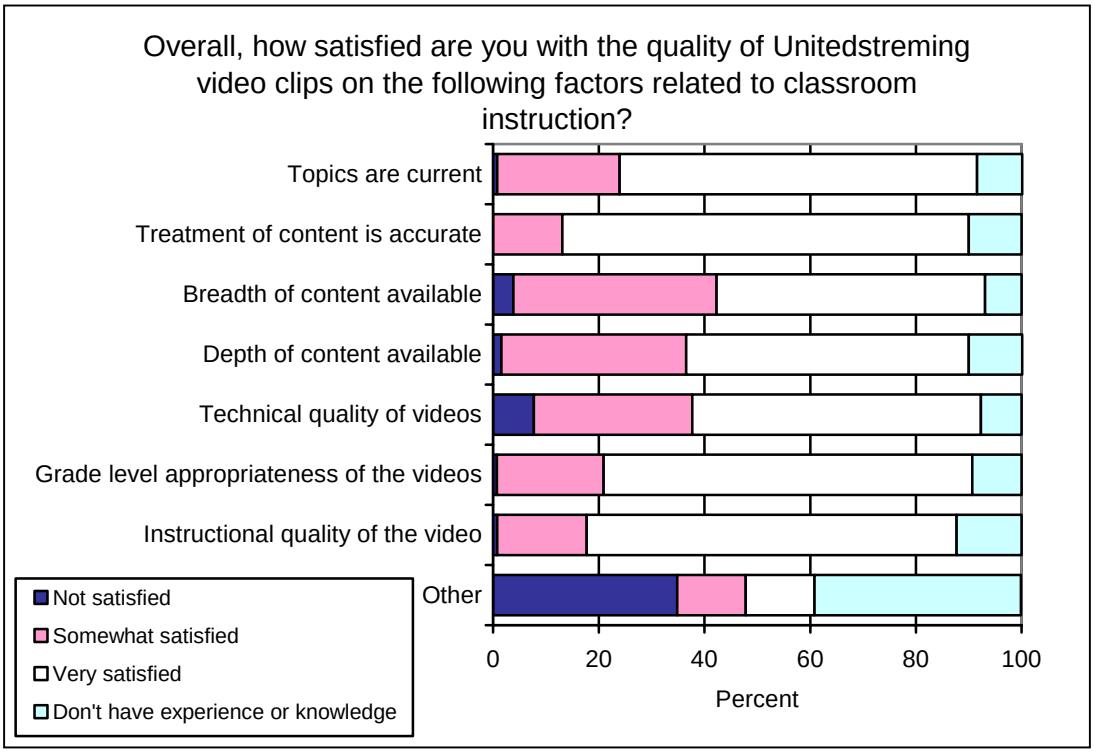
Statewide Survey Respondents' Satisfaction with u*nitedstreaming™*

Ninety-eight percent (98%) of educators who responded to the Statewide Survey said they would recommend unitedstreaming™ to other teachers. In addition to a general question about satisfaction, statewide users were asked to comment about the extent to which they were satisfied on a variety of factors related to satisfaction with the video clips (see Figure 7). Statewide

respondents were most satisfied with the accuracy and currency of the topics, grade appropriateness, and instructional quality of the clips available on unitedstreaming™. They were less satisfied with breadth and depth of the content available and the technical quality of the videos.

Overall, both the pilot teachers and the Statewide Survey respondents reported that the social studies and science clips were useful, but the mathematics and reading clips were lacking in number and quality. Finding video clips that help reinforce these core subjects is particularly important for schools that are considered in need of improvement by the No Child Left Behind (NCLB) legislation.

Figure 7: Statewide Survey Respondents Satisfaction with Elements Related to the Video Clips (N= 127)



Instructional Value of Video on Demand Products

Instructional Value from the Point of View of Pilot Teachers and School Personnel. Teachers in the pilot study were asked on weekly logs to comment on the instructional value of the video clips they used for instruction, as were school personnel during the pilot interviews. Figure 8 below categorizes these comments and provides quotes to illustrate each of the points.

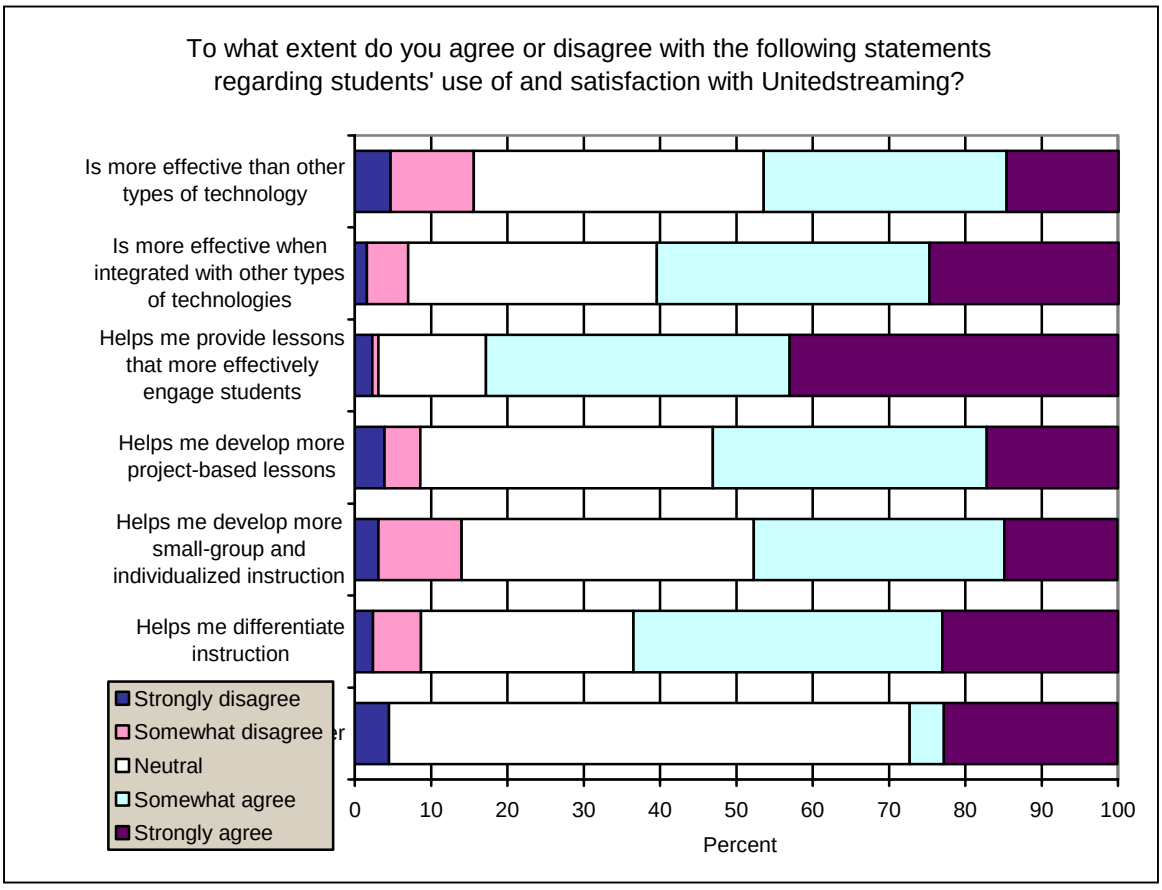
Figure 8: Perceptions of Instructional Value by Pilot Study Teachers and School-Based Personnel

Instructional Value and Number of Teacher (T) and School/District Personnel (S/DP) Commenting	Selected Comments
Motivated student learning and promoted active and focused student engagement in learning. (T-26) (S/DP-5)	**"***The video clips promoted student participation in class discussions and got some students talking who did not participate previously*." **Teacher**
	"*My students were active participants in their learning. The details and amount of information received exceeded what I could have given them with discussions and readings*." **Teacher**
	"At times videos clarified steps in Math and in Science; these explanations enabled my students to ask more questions." **Teacher**
Brought concepts to life powerfully through visuals. (T-14) (S/DP-3)	"*Provided a visual the teacher could not provide and added another dimension to learning. It allowed students with limited experience to build background connections for reading and writing.*" **Teacher**
	"*The clips set the stage and placed students in a period, evened the playing field in giving each student enough information to then read and discuss."* **Teacher**
	"I think this kind of technology is helpful because it activates the 20-40-60 rule (e.g. we retain 20% of what we hear, 40% of what we see, and 60% of what we do). If you don't have a mental image, you don't retain knowledge." **Principal**
Improved student information acquisition, retention, and retrieval. (T-14) (S/DP-2)	*"Students who generally do not perform well academically profited a great deal from the clips as they had a visual as well as the text. I saw gains in classroom tests as a result of viewing the clips."* **Teacher**
	"*The 5th graders do a big segment on ecology which includes a two night stay at Ferry Beach ecology school in Saco, Maine. The teachers were able to show the students materials and concepts in advance of the trip. While on the trip the students referred back to a lot of the content they were exposed to through video on demand clips."* **Principal**
Encouraged small group and independent project-based student work. (T-13) (S/DP 3)	"*Students used video clips more often than before to cite facts and provide evidence when reporting on a research topic, or to answer a question*." **Teacher**
	"*I did not use videos as references for projects before I piloted this program. This is a fantastic technique that provides an interesting resource to reinforce learned concepts. I will continue to do this when students are creating skits, games, projects or preparing for tests*." **Teacher**
Provided pedagogical strategies and curricular support for teachers. (T-8) (S/DP 3)	**"** *I picked up teaching tips and strategies and gained from product features such as the lesson plans, blackline masters, and quizzes they provided*." **Teacher**
	"The content-rich clips correlated well with the texts and curriculum we use, right down to the vocabulary, especially in the social sciences. The videos tend to be more up to date than textbooks. I also appreciate the fact that content is from a reliable source and pre-screened." **Curriculum Coordinator**
	"*There were lessons on geometry that I used to refresh myself in order to be able to teach the content. I used some of the methods and saw how to explain concepts (e.g. How to use a compass to make an angle/triangle was a new skill I had not seen)."* **Teacher**

The most frequently reported responses indicate that educators felt that the use of video on demand products increased student motivation to learn and their engagement in the learning process and effectively brought concepts to life in a way that enhanced the quality of instruction.

Statewide Survey Respondents' Opinion Regarding Instructional Value of Video on Demand Clips. Respondents to the statewide survey were also asked to provide indications regarding the extent to which they were satisfied with the instructional application of the unitedstreaming™ video clips. Their responses to this question are illustrated on Figure 9 below. These results indicate that NH educators found the video clips to be most useful in effectively engaging students with differentiated instruction.

Figure 9: Statewide Survey Respondents' Perception of the Instructional Value of the Video Clips. (N = 127)



Reactions of Students in the Pilot Study to the Use of Video on Demand in the Classroom

As part of the follow up to the on-site classroom observations, a sample of students in some of the participating schools were asked by the observer to provide feedback on the use of video

on demand in their classrooms. Students' positive comments regarding video elements and content included:

- They liked the clips where kids were represented and where students their age are presenting the material.
- They liked the humorous presentations, reenactments, and on-location scenery.
- The quizzes were appreciated, especially those that had no right and wrong answer, as they made you think.
- They enjoyed the step-by-step and realistic nature of the science clips and appreciated the authenticity of the clips, especially about other cultures.

Students also had some negative comments and suggestions on how to improve video clip productions. These included:

- Students did not like the writing and grammar clips, especially the convention of Harold Syntax. Grammar information was considered boring and not presented in a clear and concise fashion.
- Sometimes the content was not age appropriate (i.e., too young for 5th graders).
- Occasionally (especially in the Chalkwaves videos), the quality of the video was poor; actors spoke too quickly or their speech was not clear.

Pilot Teachers' Side-by-Side Comparison Between unitedstreaming™ and Chalkwaves on Content, Presentational Qualities and Challenges

Teachers in the pilot study were asked on their weekly logs to provide their feedback on the appropriateness of the content, the presentational style of the videos, and any challenges they encountered in using the video clips. Their feedback on both video on demand products is listed in Figure 10 below.

Figure 10: Pilot Teachers' Comments on unitedstreaming™ and Chalkwaves Video Clips

Quality Categories	unitedstreaming™	Chalkwaves
Content	• Excellent quality in content and programming. • Videos were fact-based. • There were plentiful options for content and subject matter.	• Content often dated in theme and style. • Content often not age appropriate for grade level indicated. • The science segments were good; provided clear step-by-step procedures. (Chalkwaves science clips were a popular choice for teachers). • Not a lot of content to choose from. Hard to find topics on the human body.
Presentation	• Style was up-to-date and more contemporary in presentation. • The longer clips were very enjoyable. • The cartoon style quality was good.	• Media seemed recycled from other educational videos; some clips seemed to be from the 70s and kids couldn't relate. • No volume problems. Audible without technology to enhance the sound. • Technology is easy to use; easy to call up a media file.
Challenges	• Time consuming to find appropriate clips, especially if you have to go to a lab to view them. Whole clips had to be viewed to review them; there is ***no option to scroll through the clip segment.*** Searching for relevant clips was difficult. • Web access and downloading was slow at certain times of day due to bandwidth traffic (needed to plan when you would use it). • There were inconsistencies in volume. Some teachers had to install or retrofit supplemental sound systems so the audio could be heard. • Video sometimes appeared blurry on large screen/resolution low. • Links to blackline masters not always working and sometimes didn't print.	• The Chalkwaves video clips were adequate with PCs, but not stable with Apple and LINUX. • Sound dubbed over voice was distracting. • Often the videos were choppy.

Summary of Use and Value of Videostreaming Products

Video clips were used extensively by pilot teachers and statewide educators across an instructional continuum during the course of the 2004-2005 school year. The majority of teachers employed sophisticated techniques to integrate video clips into lessons as

demonstrations, review, or to encourage student independent project-based research and small group work.

Educators reported that the use of both of these video on demand products enhanced the quality of their instruction and contributed greatly to students' engagement in learning, motivation to learn, and retention and retrieval of information. Teachers and school personnel consistently reported that this kind of technology was of great benefit to students who struggle in the learning process, by providing them with visuals that greatly increased their ability to engage with classroom content and written texts and enter into classroom discussions. There was a very high level of satisfaction with the videostreaming products among all levels of school staff and students and recognition of the importance of this kind of technology in improving the quality of teaching and learning.

While praising these videostreaming products, teachers expressed some frustration with accessing and using products. With unitedstreaming™, they reported often encountering difficulties downloading due to bandwidth problems. With Chalkwaves, they encountered problems finding appropriate clips or quality clips. unitedstreaming™ was considered to have better quality in content and programming and many more clips to choose from in a wide range of subject areas. On the other hand, Chalkwaves was considered easier to download and use and easier to navigate as the product has a scroll function that helps in locating clips. Chalkwaves, however, was difficult to set up on the Apple and Linux environments.

Section II: Technology Infrastructure Supporting Video on Demand Products

In order to determine educators' readiness and comfort level with various technology applications and preparedness to adopt videostreaming technology, both pilot teachers and respondents to the statewide survey were asked about several factors related to their level of expertise in using technology, their access to technology, and technology support in the classroom. These factors included: (1) their level of familiarity with a variety of technology-based applications for classroom instruction; (2) the technology and ancillary equipment available to them in their school and classroom; and (3) the level of technical support available to them in their school and district. Their responses to these questions are discussed in this section.

Educators' Levels of Expertise in Using Technology

Both the pilot study teachers and the statewide survey respondents were asked to respond to questions about their level of technology integration and the extent to which they use technology

and the media in instructional research and teaching. The *Technology Use Profile* developed by the New Hampshire Department of Education (NHDOE , 2003) to gauge educators' level of technology integration (LoTi Level) was reproduced and used in this study.

As illustrated in Figure 11 below, the majority of teachers in the pilot study reported LoTi levels clustered around the middle of the LoTi scale at the Exploration (38%) and the Infusion Levels (50%). While the teachers in the pilot study reported only moderate levels of confidence with technology integration in instruction at the beginning of this study (when this rating was taken), they were indeed successful in using and adapting the videostreaming technology in their classrooms. The pilot teachers suggested, during video conference check-ins, that they felt their level of comfort with technology and technology-based applications in the classroom had increased during the course of the six-month pilot effort using Chalkwaves and unitedstreaming™ video clips.

Educators responding to the statewide survey reported slightly higher LoTi levels overall (see Figure11). Based on these findings, it is assumed that this population of respondents are early adapters of videostreaming technology in the classroom and also most likely to be more comfortable with technology than their colleagues. The majority of the statewide survey respondents listed themselves at Level 3 (Infusion) and above. As illustrated in Figure 11, 80% of the educators statewide cluster around the first three levels of the Loti Scale (NHDOE, 2004). Almost one-fourth of the teachers statewide rate themselves at Level 0, indicating that they do not use computer technology in classroom management or instruction.

Figure 11: Educators' Reported Levels of Technology Integration (LoTi)

Level of Technology Integration (LoTi) and Definitions		Pilot Teachers' Reported Levels (N=8)	Statewide Survey Respondents (N=141)	NH Educators (N=7,595)
Level 0: Nonuse		**0%**	**0%**	**24%**
Level 1: Awareness	Technology is used by the teacher for management tasks, such as taking attendance and record keeping.	**0%**	**2% (3)**	**15%**
Level 2: Exploration	Technology-based tools supplement the existing instructional program.	**38% (3)**	**16% (23)**	**29%**
Level 3: Infusion	The use of databases, spreadsheets, multimedia, desktop publishing applications and the Internet complement instructional events.	**50% (4)**	**23% (32)**	**12%**
Level 4: Integration	Technology-based tools are integrated in a manner that provides rich context for students' understanding of concepts, themes and processes.	**12% (1)**	**30% (42)**	**17%**
Level 5: Expansion	Technology access is extended beyond the classroom.	**0%**	**17% (24)**	**2%**
Level 6: Refinement	Technology is perceived as a process, product and/or tool for students to find solutions to "real-world" problems. There is no longer a division between instruction and technology use in the classroom.	**0%**	**12% (17)**	**0%**

Use of Technologies and Media for Instructional Purposes

Another indication of teachers' comfort level with technology is the amount of time they spend each week using such technologies as the Internet and other media for instructional-related activities and research. Sixty-three percent (5) of the teachers in the pilot study reported using the Internet for two to five hours per week for instructional preparation and research (see Figure 12). The statewide survey respondents indicated a greater number of hours on average each week spent in similar online research for instructional purposes. More than a third of the statewide survey respondents reported spending six or more hours per week using the Internet for preparation and instructional purposes.

Figure 12: Educators' Time Spent In-School on Internet-Based Activities Related to Instruction

Number of Hours of Internet Activity for Instructional Purposes	Number of Pilot Teachers Using Internet (N=8)	Number of Statewide Survey Respondents Using Internet (N=144)
<1 Hour Per Week	**12% (1)**	**8% (12)**
2-5 Hours Per Week	**63% (5)**	**55% (79)**
6-10 Hours Per Week	**25% (2)**	**17% (24)**
> 10 Hours Per Week	**0%**	**20% (29)**

These results *suggest* that the majority of the teachers who participated in the pilot and who responded to the statewide survey have a good deal of experience with the Internet at their school site, the kind of familiarity that would allow them to easily navigate the Internet and use websites to research and access applications, materials, and products to enhance instruction.

Use of Public Broadcasting, Local TV Stations and Cable-Based Programs for Instruction

Pilot teachers were asked to comment on the television resources they used in the past six months to support instruction in their classroom. The majority of the teachers (63%) in the pilot reported using PBS programming to supplement their classroom instruction; one teacher reported the use of Instructional Television (ITV), and one reported the use of the Discovery Channel. About a third (38%) of the pilot teachers indicated no use of television programs to supplement their instructional practice.

Use of Websites, Video On Demand Products, CD-ROM, Video, and DVD to Support Classroom Instruction

Pilot teachers reported active use of Internet websites, video on demand products (e.g. Chalkwaves and unitedstreaming™), videos, CD-ROMs, and DVDs for instructional support. The following details pilot teachers' use of these technology-based products:

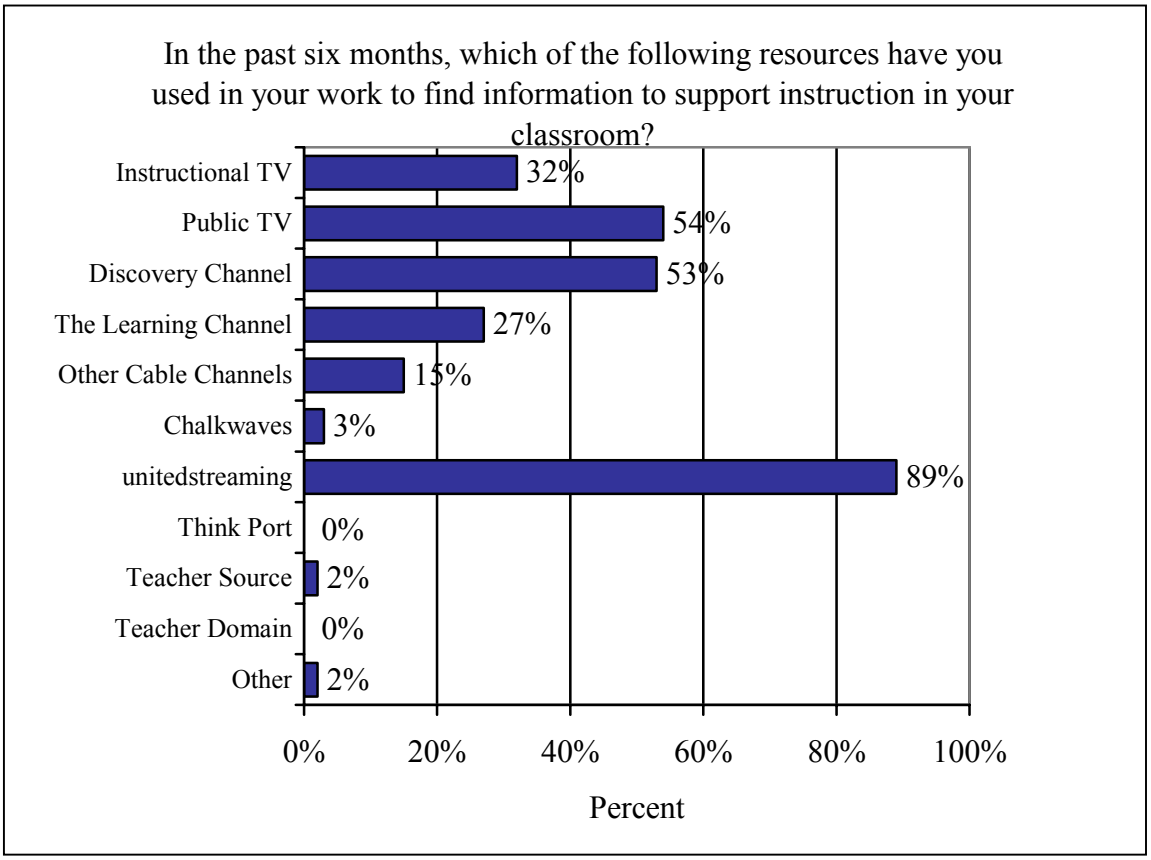
Videos, CD-ROM, and DVDs: The overwhelming majority of teachers (88%) reported using videos, CD-ROMs, and DVDs to support their classroom instruction.

Internet Websites: Six (75%) reported using Internet websites to supplement instruction.

Video on Demand: Five (63%) reported using video on demand products such as Chalkwaves and/or unitedstreaming™.

Respondents to the statewide survey were asked similar questions about their use of television and Internet-based technologies to enhance instruction and how they accessed these media (see Figure 13). While the overwhelming majority of statewide survey respondents (89%) reported using unitedstreaming™ video clips, more than half of the respondents also indicated that they accessed their local public television stations (54%) and the Discovery Channel (53%) for instructional purposes. Almost a third also indicated using Instructional Television (32%) and the Learning Channel (27%) to enhance their classroom instruction.

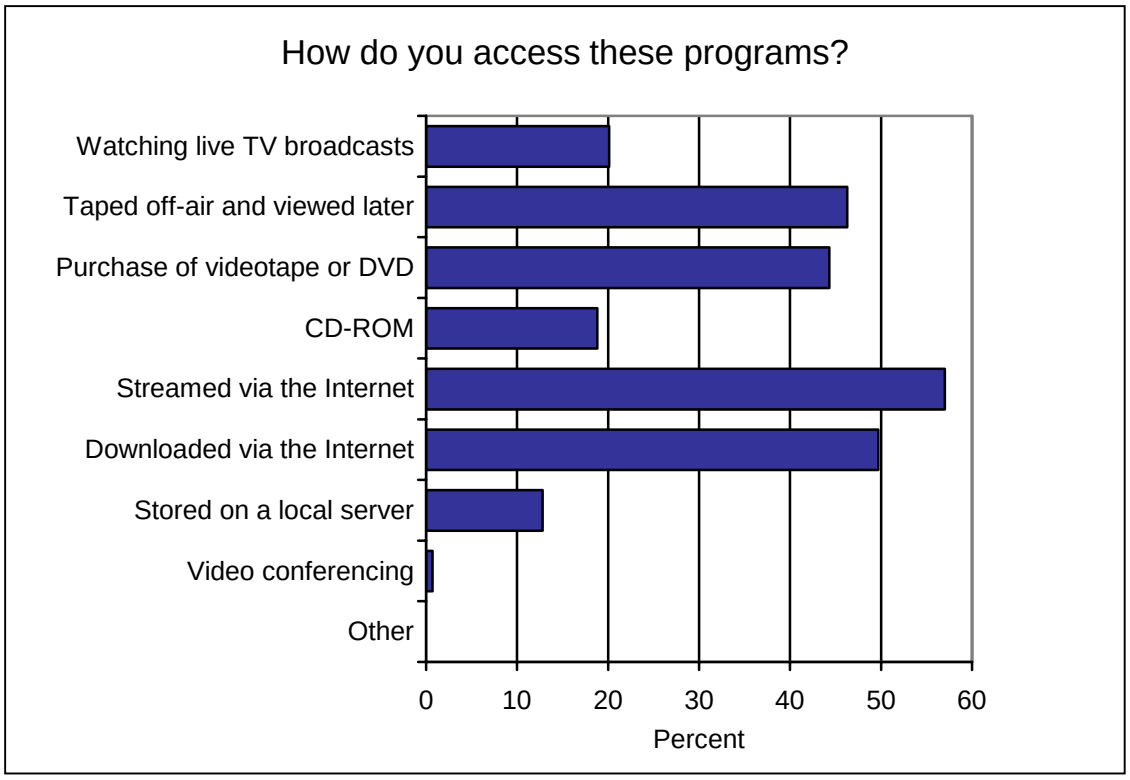
Figure 13: Statewide Survey Respondents Reported Use of Media in Instruction



These same statewide educators were asked to indicate how they accessed these programs. The following chart illustrates that almost an equal number of respondents reported either accessing video live from the Internet through videostreaming (66%) or that they downloaded the video clips from the Internet (57%) (see Figure 14). More than half of the respondents (53%)

reported taping TV programs for later use while less than one-fourth (23%) reported using live TV broadcasts.

Figure 14: Statewide Survey Respondents Reported Access to TV and Internet Programming (N= 129)



Technology Infrastructure in the Schools

Since access to computers and other related technologies is another factor that can influence teachers' successful use of computer software applications and the Internet, pilot teachers and statewide survey respondents were asked to comment on their access to computers and ancillary equipment at their school.

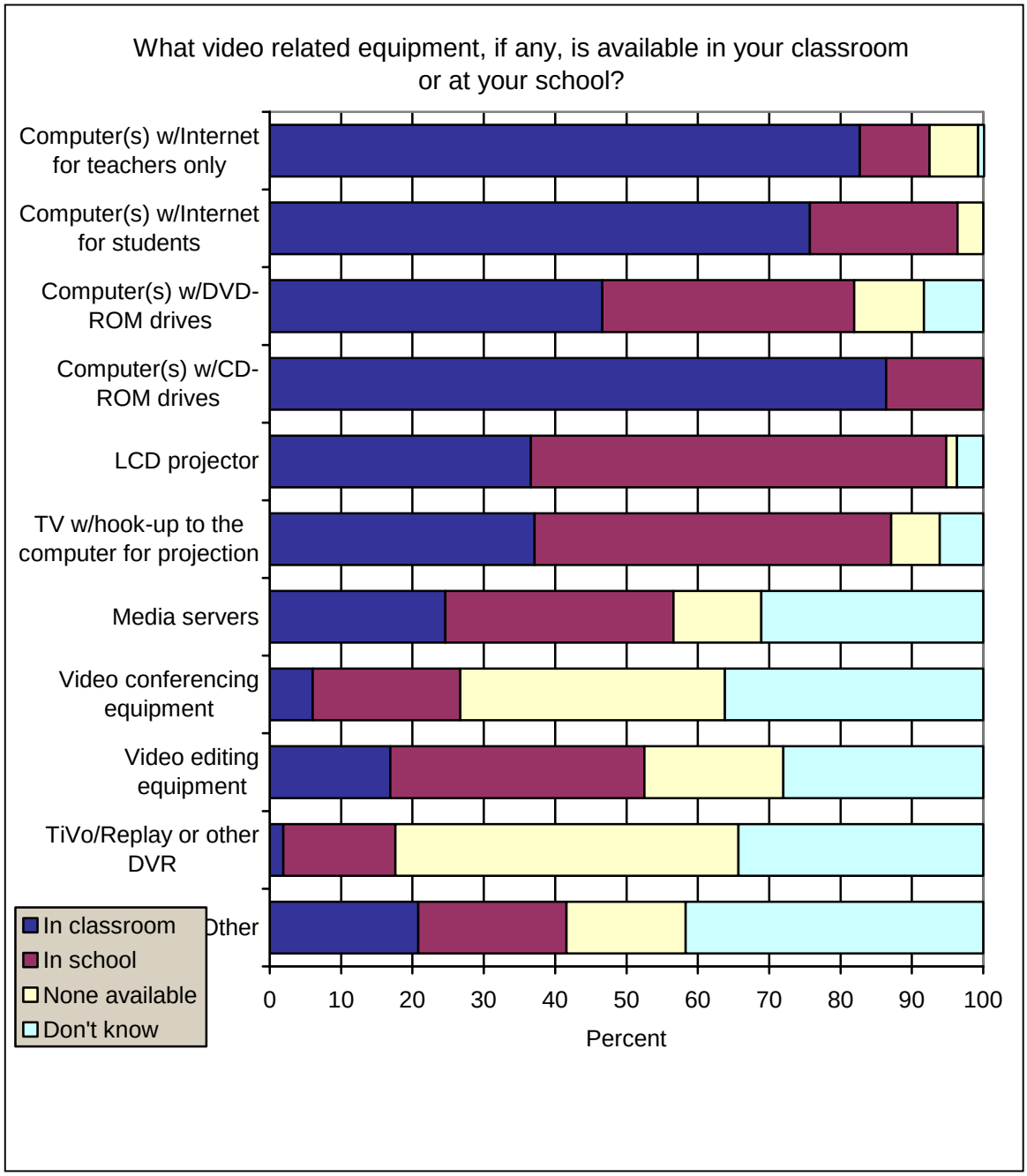
The teachers in the pilot study indicated the following technology infrastructure and capacity in their school.

- 100% (7) Computers available to students **outside of the classroom** (e.g., lab, library).
- 86% (6) At least one computer available **in the classroom** for student use.
- 86% (6) At least **one classroom computer** installed with T-1 or high-speed cable access.
- 86% (6) LCD projectors available **in the school** to support video on demand use in large group settings.

- 86% (6) Monitors available **in the school** to support video on demand use in large group settings.
- 43% (3) Computer(s) **in the classroom** with sufficient hardware and bandwidth capacity to easily download video on demand products.

Statewide survey respondents were asked similar questions about the technology infrastructure available in their schools (see Figure 15).

Figure 15: Statewide Survey Respondents' Reported Level of Technology Infrastructure



These results indicate that teachers have access to computers in the school, but few have the necessary ancillary equipment (e.g. LCD and TV Monitors) in the classroom to use this technology for whole group instruction. Most teachers suggested that this kind of technology was used most often for small group, paired, or individual work or that students were able to use the technology in large computer or library lab settings. This kind of use limits the immediacy of video on-demand use in the classroom.

Challenges in Using Technology-Based Applications in Instruction. Teachers in the pilot study were further asked to comment in an open-ended format on the problems or challenges they had in using computer programs or online technologies in the classroom. Several teachers reported that they had trouble downloading video on demand clips for the following reasons:

- Computers in the classroom lacked the bandwidth capacity or memory to download the streaming video or that the video would shut down during viewing. (One school reported that only one laptop computer could support videostreaming.)
- In some cases, sound quality was poor when using the laptops, thus requiring the volume to be augmented with speakers.
- The streaming video would shut down or would not download completely when the server was too busy.
- Several teachers reported difficulty in showing the video clips to the entire class as a television was not always available, or the connecting wires were broken or faulty and hadn't been fixed.

School or District Level Technology Integration Support

Teachers in the pilot study, interviewees, and the respondents to the statewide survey were all asked to comment on the levels of technical support that existed at the school or district level to support video on demand use.

Pilot teachers reported the following technology support and technical assistance at the school and district level:

- 86% (6) On-site (school-based) technology-support person (e.g., in centers or libraries or in computer labs during sessions).
- 86% (6) Access to a fellow teacher knowledgeable about technology who assisted with hardware and/or video applications (e.g., district-trained technology mentors).
- 71% (5) District-level technology support staff available in *one-to-two days of request*.

- 71% (5) District or school-based curricular support for technology integration (e.g., curriculum specialist who is knowledgeable about the integration of video on demand products in instruction).
- 43% (3) District-level technology support staff *on demand*.

Statewide survey respondents indicated that the greatest majority of support they received in using technology in the classroom was received at the school level. (See Figure 16.)

Responses to the Statewide Survey question: *To what extent was technical and instructional support available at your school or district to support your use of unitedstreaming™ video clips and features?*

Figure 16: Statewide Survey Respondents Reported Level of Support with Video on Demand Products at the School or District Level

Types of Support For Video on Demand Technology	Number Reporting	Available at the School Level	Available at the District Level	No Assistance Available
Technology Support	**125**	68%	19%	15%
Instructional Support	**122**	57%	16%	28%
Other Support (e.g., unitedstreaming™ Tech. Support, Self, Friend)	**19**			

These data suggest that the most reliable source of technology support for classroom teachers was provided at the school level, especially by teachers who were trained as technology mentors at the district or state level.

Summary of Educators' Readiness and School Technology in Place to Support Video on Demand Applications

The majority of the teachers in the pilot and respondents to the statewide survey were highly experienced educators, grounded in their content area and classroom practice, and sufficiently familiar with web-based products to expand their use of technology to more effectively enhance instruction. Results from this study indicate that some teachers may lack access to the kind of technology and equipment they need to make full use of the video on demand products. Some teachers had problems using video clips because of faulty or broken equipment or lack of access to an LCD screen or a TV monitor. Often teachers needed to reserve ancillary equipment prior to using it in the classroom, limiting the spontaneity and immediacy of the technology. Some also complained that computers lacked the memory to download streamingvideo or that the video would shut down during viewing.

In addition, the kind of support available to teachers was primarily located at the school building level. The following were most often cited as resources in troubleshooting instructional technology problems: librarians, computer lab technicians, tech-savvy colleagues, or trained technology mentors.

Section III: Need for Professional Development and Technical Assistance to Support Video on Demand Use in the Classroom

All interviewees, pilot teachers, and statewide survey respondents were asked about the kind of technical assistance they felt should be in place to support the training needs of teachers and school-support personnel, who might be using video on demand products in the future and what entities in the state might best provide this kind of technical assistance.

Technical Assistance Needs

In open-ended responses, the majority of pilot teachers and interviewees reported that they felt there was a need for training across a continuum from awareness to instructional integration, depending on the experience, technical expertise, and needs of users. Suggested training and technical assistance included:

- ***Awareness*** of the video on demand products and services that are available, answering the question, *What's different about video on demand products*?;
- Technical training in how to ***efficiently and effectively use the technology***, including training in downloading and editing clips for future use;
- ***Hands-on practice using the video on demand products***, including all features and applications, addressing the needs of beginning, intermediate, and advanced users;
- ***In-depth training in instructional integration***, utilizing and embedding full and partial clips into other technology applications to support instruction.
- Training in utilizing the video on demand technology to ***support student independent research and project-based independent and small group work.***

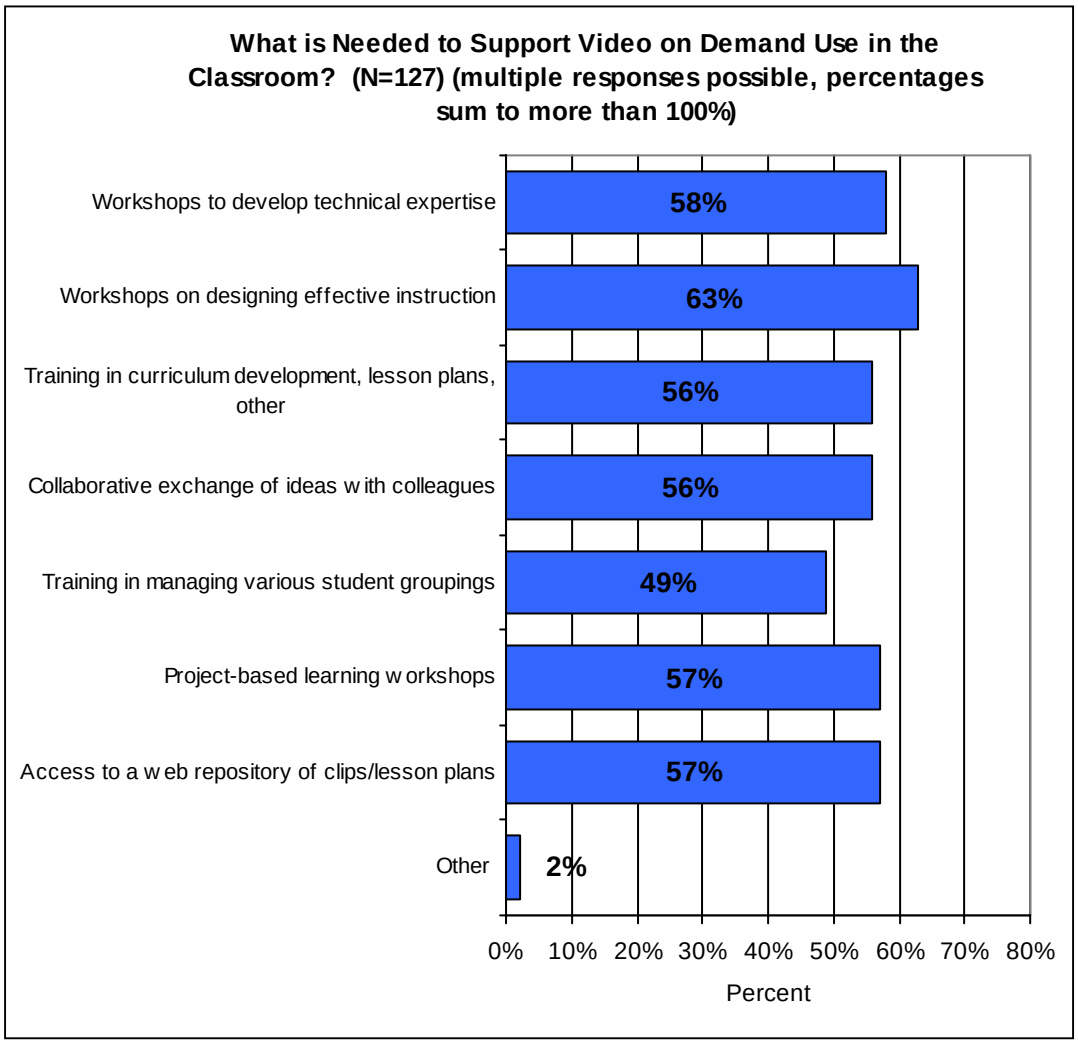
Respondents to the statewide survey were asked to check off the kind of technical assistance they would like to see in place to support the use of video on demand in the classroom in the future. Their responses are illustrated in Figure 17 below.

While more than half of the respondents reported favorably to each of the suggestions for technical assistance, almost two-thirds (63%) of the respondents selected the category of "*workshops to design and deliver effective instruction using video on demand technology*." As

with the responses from the pilot teachers and the school and district interviewees, these results suggest that there is a continuum of technical assistance needs depending on the level of expertise of the educator and the depth of their experience in using technology. No one need stands out, suggesting that any professional development offered to educators should address a wide spectrum of needs (see Figure 17).

When the data were examined for differences in responses related to age or number of years teaching, few differences emerged among respondents, except for the fact that *fewer* teachers new to the profession (< 2 years) indicated a need for more in-depth training around the technology aspects of video on demand. These younger teachers did, however, indicate a need for training in effective instruction and more information on how to carry out project-based learning at about the same rate as other teachers. These results suggest that younger teachers are more comfortable, savvy, and probably more highly trained in technology applications and technology-based instruction, having learned many of these applications in recent college courses and because they are, in general, more confident with technology. This was true among the pilot teachers also who were new to the profession. These teachers tended to have fewer fears about technology itself and more concerns about how to apply this technology in instructional settings.

Figure 17: Suggested Professional Development and Technical Assistance Needs as Reported by Statewide Respondents



Suggested Providers of Technical Assistance

In addition to technical assistance needs, the pilot teachers and interviewees were asked what entities in the state might best provide technical assistance in using video on demand products in schools.

Figure 18 below illustrates the types of providers suggested by the pilot teachers and interviewees.

Figure 18: Suggested Providers of Technical Assistance by Pilot Teachers and Interviewees. (N=24)

In-House or District Training	Local Education Support Centers (LECN)	NHPTV Educational Services	New Hampshire Department of Education	Other: e.g., Online Learning, WEB Ex training	All Providers
16 (67%)	9 (38%)	8 (33%)	1 (4%)	2 (8%)	5 (21%)

Note: *Respondents could check more than one response.*

In house or district-based training. The overwhelming majority of respondents suggested that in-house or district-based training that is *teacher-to-teacher* would be the most effective and efficient way to provide technical assistance and training on video on demand products and services. They particularly like the *train-the-trainer* model and would like to see their in-house or in-district trainers train several teachers to then work within the school or with their in-house training unit. Several respondents felt that it was important to tie training to what's happening overall at the school and district level. Sharing sessions where teachers can exchange ideas at the school or district level were also considered important strategies for engaging teachers with the new technology.

Another model suggested by respondents was the tech mentor model that is already used in several of the districts involved in this pilot. Much like the benchmark coaches, the tech mentors, who are usually teachers in the schools, are trained at the district level to support teacher's use of technology in the classroom. It was suggested that this tech mentor concept could be expanded to include trained experts in each school, who could address the day-to-day needs of teachers in using video on demand technology.

The second most frequently commented on entity for providing technical assistance was the Local Education Support Centers (LESC) that provide technology–enhanced professional development regionally throughout New Hampshire. Respondents felt that these centers could effectively train teachers through workshops and conferences to use the video on demand products.

Keeping training and technical assistance as close to the school and the teachers as possible was the key message from most of the respondents. Building capacity at the school level is considered the best way to ensure the use of new products on a consistent and efficient basis.

NHPTV's Role in Providing Training and Technical Assistance for Video on Demand Products

While NHPTV was not seen by a majority of respondents as an "on-site," day-to-day provider of technical training or technical assistance for video on demand products in the schools, their role as *innovative leader* in the state in the use of technology-based products in instruction was noted by the majority of respondents. Several respondents commented that school and district personnel depend on NHPTV Educational Services to introduce educators to new technologies and advances in video-based applications in the schools. One principal commented:

> *"We look to NHPTV to introduce new technologies and to help the schools to try them out and support their use. No one else in the state is positioned for this kind of forward thinking work. It was bold of NHPTV to acknowledge that the future means moving away from traditional TV-based programming."*

Several respondents acknowledged the unique role NHPTV plays in large-scale rollouts of new technology applications, creating awareness of products on a statewide scale, pushing the envelope on technology use in the schools. In addition, some felt that NHPTV Educational Services could be a critical player in the field by offering a summer institute or regional trainings where they might train a cadre of video coaches who would later work side by side with teachers in the schools. Finally, some respondents felt that that NHPTV could serve the role as collaborator with districts in pursuing grants to purchase or implement these new technologies in the schools, building, as mentioned previously, a cadre of tech mentors to work with teachers.

Summary of Professional Development and Technical Assistance Needs

The data from this study indicate that there is a need for training around video on demand technology and applications that varies across a continuum from awareness to highly complex instructional integration, depending on the experience, technical expertise, and needs of users. Keeping training and technical assistance as close to the school and the teachers as possible, regardless of the provider, was the key message from the respondents. Building capacity at the school level is considered the best way to ensure the use of new products on a consistent and efficient basis. NHPTV is seen as an innovative leader in the state in the use of technology-based products in instruction. Schools and district personnel look to NHPTV Educational Services to introduce educators to new technologies and advances in video-based applications in the schools.

CONCLUSIONS AND RECOMMENDATIONS

The previous sections of this report detail findings from both the NHPTV pilot study of the use of Chalkwaves and unitedstreaming™ video on demand products by teachers in four districts in New Hampshire and the results of a statewide survey of NH educators who were using unitedstreaming™ products and services during school year 2004-2005. This section offers some observations about the findings and presents recommendations about NHPTV's further role in supporting video on demand products and services to enhance instruction in NH schools.

1. Teachers are computer and media savvy and enthusiastic about the use of video on demand products to support instruction.

Results from the pilot study and the statewide survey indicate that teachers are media and computer savvy and overwhelmingly enthusiastic about using video on demand products to support instruction. Educators used these video on demand products extensively during the 2004-2005 school year and reported that video clips enhanced the quality of their instruction and contributed greatly to students' engagement in learning, especially those students who were previously less enthusiastic about participating in classroom instruction.

Recommendation: NHPTV could play a pivotal leadership role within the state and build on the current enthusiasm and need for this kind of instructional technology by providing districts, schools, and teachers with a ***central web-based clearinghouse*** on video on demand products and other technologies to support classroom instruction. This clearinghouse could provide access to such important resources as: a list of all credible vendors; information about video on demand products and services; a rubric to help in selecting appropriate products and services to serve teachers' instructional needs; and step-by-step information on how to use video on demand technology in instruction.

NHPTV is currently equipped with staff and web resources to create a central web-based clearinghouse. In addition, NHPTV is investigating potential revenue sharing models with the leading vendors to defray cost associated with maintaining and updating the clearinghouse.

2. The technology infrastructure in the schools and districts is not adequate to <u>fully</u> support video on demand technology.

Both teachers in the pilot study and respondents to the statewide survey reported having some technology problems in fully using video on demand technology. Some teachers reported that computers in the classroom lacked the bandwidth capacity or memory to download the streaming video or that the video would not download completely when the server was busy. Both the pilot teachers and the respondents to the statewide survey indicated that they were hampered in showing video on demand in whole classroom settings as there was limited access in schools to ancillary equipment such as LCD screens and TV monitors that would allow for this kind of whole group instruction. Students often viewed videos in lab settings with two to three on a computer or at individual computers in the classroom, library, or computer lab. Having to reserve equipment limits the spontaneous access to video on demand technology that could enhance instruction in the classroom.

Recommendation: NHPTV could play a valuable ***educational role*** within the state to personnel at the school and district levels and at the Local Educational Support Centers (LESCs) regarding the kind of technology infrastructure that needs to be in place in schools and classrooms to fully implement video on demand technology in instruction.

3. There is a need for technical assistance to teachers in order to assist them in fully implementing the video on demand technology.

Pilot teachers and statewide respondents indicated that while they had some technology support and technical assistance at the school level, they lacked the kind of technical assistance around curriculum integration that allowed them to *fully implement* video on demand technology in instruction. The data from the pilot study and the statewide survey suggests that the most reliable source of technology support for classroom teachers was provided at the school level, especially by teachers who were trained as technology mentors or through trained media or computer specialists. School and district interviewees consistently reported that they preferred technical assistance that was immediate and provided at the school level either through teachers who were trained as technology coaches or media specialists.

Recommendation: NHPTV could ***expand its current technology workshops*** offered through its Educational Services to include information to schools and districts on upgrading, retooling, and managing media to accommodate video on demand in the classroom. NHPTV could play a pivotal role in the state by ***expanding the current successful pilot effort*** to use video on demand in the classroom and providing additional technical support and

professional development to schools to aid them in making greater use of all video on demand products and services, such as lesson plans, blackline masters, and student quizzes. These workshops could provide valuable information to school personnel on the best use of video on demand to support the curriculum and the most effective way to integrate this technology with instruction. NHPTV is currently positioned with the staff and resources to re-tool existing workshops on the use of media in the classroom to accommodate video on demand in the classroom.

4. **The results of the pilot study and the statewide survey indicate that teachers need and desire professional development related to integrating video on demand technology in classroom instruction.**

Data included in this report indicate that teachers are the primary users of video on demand technology and that they need to know how to effectively use this kind of technology in the classroom. Data from this study also overwhelmingly suggests that professional development is best provided at the school or district level using the train-the-trainer model where it can be efficiently and effectively delivered to all levels of school personnel. This kind of in-school training model also assures that any learning or "intelligence" remains at the school and district level.

Data from this study suggests that there is a range of professional development needed to support video on demand technology depending on the experience and expertise of the educator. These needs for professional development could be conceived along a continuum from simple awareness of the types of products available to in-depth training in instructional integration, utilizing and embedding full and partial clips into other technology applications to support instruction, or utilizing this technology to support direct instruction and project-based learning.

Recommendation: NHPTV could engage with Education faculty at the University of New Hampshire to design a professional development model or an extended pilot effort that would work with schools within the UNH network to integrate the use of video on demand into the broader context of effective instruction with technology. Participants in the pilot could include UNH faculty, mentor teachers at each school and pre-service teachers. The goal of this pilot effort would be to design a model for professional development that is

embedded in larger instructional innovations and transferable to a variety of educational settings.

Once a model is developed and tested, NHPTV could make extensive use of its network of professionals at the university and state levels to provide systematic professional development to an expanding group of schools and districts. By utilizing the train-the-trainer model, NHPTV could develop a cadre of technology coaches at the school and district levels to maximize the use of technology-based instruction in NH schools. Grant funds would need to be solicited to implement a pilot of this nature.

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Report on the
New Hampshire Public Television
Video on Demand Pilot Study

APPENDICES

NHPTV LEADS INTERNET VIDEO-ON-DEMAND PILOT STUDY FOR NH CLASSROOMS

Educators are beginning to make greater use of Internet-based video resources as an integrated part of a lesson, seeking out short clips for use in their classrooms. Several private providers, such as Discovery Education's unitedstreaming™ and Chalkwaves, offer subscription-based services to digital collections aligned to state standards and a wealth of related multimedia resources for the classroom. Within minutes, educators can find their content through searches, watch them online, use online teacher guides or materials, and incorporate the videos into online interactive assignments.

This year, Discovery Education is making available to school districts nationally one free license per district for the unitedstreaming™ video-on-demand product. More than 170 schools in New Hampshire have taken advantage of this offer to date, and four schools currently are participating in a test of Chalkwaves, a public television video-on-demand product.

To take advantage of these two video-on-demand opportunities in the Granite State, New Hampshire Public Television (NHPTV) has designed a study to track and evaluate teachers' and students' experiences in the use of Chalkwaves and Discovery Education's unitedstreaming™.

THE MAJOR GOALS OF THE NHPTV INTERNET VIDEO-ON-DEMAND STUDY ARE TO:

1) Examine the extent to which NH teachers, students, and other school personnel use and value video-on-demand products,
2) Determine the kind of technical assistance and professional development NH teachers need to fully implement and use video-on-demand products,
3) Determine the potential role of NHPTV in supporting educators' use of these products, and
4) Develop a sustainable course of action and direction for NHPTV's involvement with video-on-demand in the classroom.

This pilot project is part of New Hampshire Public Television's ongoing efforts to provide New Hampshire students and educators with up-to-date professional development resources and the latest innovations in educational technology applications.

The local school-based pilot has engaged two fifth grade teachers from each of four school districts in NH – **Merrimack**, **Merrimack Valley**, **Lincoln-Woodstock** and **Manchester** – in using Chalkwaves or unitedstreaming™. Teachers will track their usage of these products, and create and apply possible technology integration ideas with video clips for the classroom.

In addition to the teacher involvement in each of the four districts, students will be asked to participate in interviews designed to gain insight into their satisfaction with video-on-demand products. Principals, technology managers, and media specialists in the schools will also be asked to comment on the use of these products.

Teachers using the unitedstreaming™ product will be asked to participate in a survey administered by the University of New Hampshire Survey Center.

A comprehensive evaluation and report of this pilot effort will be completed by the end of July 2005. The findings will assist New Hampshire Public Television in preparing plans for the support of video-on-demand products in New Hampshire schools.

FUNDING FOR THIS PROJECT HAS BEEN PROVIDED BY:
Public Service of New Hampshire and the Southeastern Regional Education Services Center through the N.H. Department of Education's Content Enhancement Instructional Leadership Grant.

Public Service of New Hampshire
The Northeast Utilities System

NHPTV Internet Video-on-Demand Pilot Project Team members:
Kelly A. Clark, NHPTV Director of Educational Services
Kathleen J. Mackin, Ph.D., Educational Consultant
Eric English, Graduate Student, Plymouth State University

The NHPTV Knowledge Network is committed to providing learners of all ages with technology-based programs, services and resources to enhance the learning experience.
www.nhptv.org/kn

Channel 11 Durham, 15 Hanover, 18 Pittsburg, 49 Littleton, 52 Keene
Digital Channels 57 Durham, 48 Littleton, 49 Keene

NEW HAMPSHIRE PUBLIC TELEVISION

Project contact: Kelly Clark • kclark@nhptv.org • (603) 868-4359 • 268 Mast Road • Durham, NH 03824

New Hampshire Public Television-Video on Demand Pilot-Teacher Weekly Log

Teacher Name: _____ **School:** _____
Pilot Week Ending (Friday): _____ **Primary Video on Demand Product:** _____

☐ ***Please check if*** **no Video on Demand product was used this week. Specify why:**

PRODUCTS USED THIS WEEK	BRIEF DESCRIPTION OF CLIP	INSTRUCTIONAL APPLICATION	STUDENT REACTIONS	TEACHER FEEDBACK
☐ CHALKWAVES **Title(s) Used:** **Approximate length of the clip:** **On average, time spent this week previewing, reviewing, selecting clips:** ☐ one hour or less ☐ 2 – 5 hours ☐ 6 – 10 hours ☐ 11 – 15 hours ☐ More than 15 hours		**How used to support instruction:** **Other services used:** ☐ Lesson Plans ☐ Subject/grade level search ☐ NH Standards alignment ☐ Student Quizzes ☐ Other: Specify		This video clip met my instructional needs. ☐Yes ☐No I would use this video clip again. ☐Yes ☐No **Specify Benefits and/or Challenges:**
☐ UNITEDSTREAMING **Title(s) Used:** **Approximate length of the clip:** **On average, time spent this week previewing, reviewing, selecting clips:** ☐ one hour or less ☐ 2 – 5 hours ☐ 6 – 10 hours ☐ 11 – 15 hours ☐ More than 15 hours		**How used to support instruction:** **Other services used:** ☐ Lesson Plans ☐ Subject/grade level search ☐ NH Standards alignment ☐ Student Quizzes ☐ Other: Specify		This video clip met my instructional needs. ☐Yes ☐No I would use this video clip again. ☐ Yes ☐No **Specify Benefits and/or Challenges**

Submit Teacher Log to Kelly Clark via E-mail at: Kclark@nhptv.org

Appendix 3

New Hampshire Public Television
Video on Demand Pilot Study

Teacher Debriefing Questionnaire

May 23, 2005

New Hampshire Public Television
Video on Demand Pilot Study

Teacher Debriefing Questionnaire

Teacher's Name: _____

School: _____

Primary VOD Product Used: _____

Debriefing Questions

1. Overall, how satisfied are you with your experience in this pilot project?

2. What did these digital resources (Chalkwaves and/or unitedstreaming^{tm}) enable you to do that you would not have been able to do previously in your classroom?

3. Please indicate one or two new teaching strategies or techniques you acquired as a result of your engagement in this VOD pilot effort.

4. To what extent were you able to use the full array of features available through these VOD products (e.g. lesson plans, student quizzes, search functions, etc.)?

5. Please indicate the technology infrastructure that was available to you during this pilot period (January –May, 2005)?

   _____ At least one computer available in your classroom for student use

   _____ At least one classroom computer installed with T-1 or high-speed cable access

_____ Computer (s) in the classroom with sufficient hardware and bandwidth to easily download Video on Demand products

_____ Computers easily available to your students outside of the classroom (e.g. lab, library, etc.)

_____ LCD projectors available to support VOD use in large group settings

_____ Video monitors available to support VOD use in large group settings

Please indicate any other technology <u>hardware or software</u> that <u>facilitated or</u> <u>hampered</u> your use of these VOD products.

6. To what extent was there sufficient school or district-level technical assistance available to you to support your use of VOD products? (*Check all that were available to you.*)

   _____ On-site (school-based) technology-support person (e.g. in centers or libraries or in computer labs during sessions)

   _____ District-level technology support staff *on demand*

   _____ District-level technology support staff available in *one-to-two days of request*

   _____ District or school-based curricular support for technology integration (e.g. Curriculum specialist who is knowledgeable about the integration of video on demand products in instruction)

   _____ Fellow teacher knowledgeable about technology assisted with hardware and/or video applications

   _____ Other: (Specify:) _____

7. To your knowledge, are there any specific plans or priorities in place for expanded use of video on demand in support of classroom instruction in your school or district?

   IF so, how have these plans or priorities been communicated to you?

8. What constraints or challenges would your school staff experience should your district decide to use Video on Demand products and services in the future?

    - To what extent are teachers at your school prepared to use integrative technologies in classroom instruction?

9. In your opinion and based on your experience, what kind of professional development and ongoing technical support would you like to see in place in your school to support teacher's use of Video on Demand and other integrative technologies in the classroom?

10. How would you like to see teachers compensated for engaging in professional development related to technology integration? (Check all that apply)

    _____ Appropriate monetary compensation or reimbursement
    _____ Appropriate university credit
    _____ CEUs
    _____ Release time
    _____ Other: (Specify:) _____

11. In your opinion, what entity could best provide professional development and technical assistance to teachers to fully utilize Video on Demand products and services?

    _____ NH State Department of Education

    _____ In house or district training unit

    _____ Regional Professional Development Center

    _____ New Hampshire Public Television Educational Services

    _____ Other: (Specify:)_____

12. What role do you see for NHPTV in supporting teachers' use of Video on Demand and other streamingvideo products in the classroom?

13. Is there anything else you would like to add about your involvement with this Video on Demand pilot?

Appendix 4

New Hampshire Public Television
Video on Demand Pilot Study

Interview with Principals

May, 2005

Interviewers: Kelly A.Clark, NHPTV and Kathleen J. Mackin, Ph.D.

New Hampshire Public Television
Video on Demand Pilot Study

Interview Questions

I'd like to begin by asking you a few questions about the Video on Demand Products that are being piloted in your school.

1. Have you had an opportunity to be briefed on the Video on Demand pilot that is being conducted in your school?

   If Yes,

   - *What feedback have you received from teachers and other school staff involved in the pilot about the use of these Video on Demand products (Chalkwaves and unitedstreaming^{tm})? (e.g. teachers' and students' level of satisfaction, staff satisfaction, and outcomes for students, etc.)*

2. How does the use of Video on Demand products fit in with your *vision* for further technology development and technology integration in support of academic programs in your school? In the district?

3. What is the current per-pupil expenditure on instructional technology in your school, including spending for computers and ancillary equipment needed to utilize the Internet and other platforms and software programs?

4. What kind of infrastructure is available in your school to support the use of Video on Demand and other technology-based instructional programs?

5. Has technology integration for classroom teachers been a focus of school-wide professional development in the past two years? *If not*, are there any plans to provide this kind of professional development in the coming years?

6. What kind of fiscal support do you feel is needed to fully implement a technology-based infrastructure that could support Video on Demand in the district?

7. Do you believe that students at your school should have independent access to the Internet via passwords on computers in their classroom or the computer lab(s)?

8. In your opinion, if broadband access in schools is so widespread, why aren't more bandwidth-intensive applications like streaming video used by teachers and students?

9. What constraints would your school staff experience should your district decide to use Video on Demand products and services?

10. Do you plan to implement a school-based strategy for video on demand with unitedstreaming or another product in the coming year (September 2005) or within the next fiscal year (September 2006)?

11. How much of your school budget are you willing to invest to support on-site video on demand digital instructional technologies, including the technology infrastructure and the training of teachers?

12. In your opinion and based on your experience, what entity could best provide professional development and technical assistance to teachers to fully utilize video on demand products and services?

13. Is there anything else you would like to add about the use of video on demand products and services in your school?

Appendix 5

New Hampshire Public Television
Video on Demand Pilot Study

Interview with Technology Support Staff

May, 2005

New Hampshire Public Television
Video on Demand Pilot Study

Technology Support Staff Interview

Name of Interviewee(s): _____
_____

School: _____
Interviewer: _____
Date of Interview: _____

Interview Questions

I'd like to begin by asking you a few questions about the Video on Demand products that are being piloted by NHPTV in your school.

1. What is your perception of how the Video on Demand products and services (Chalkwaves and unitedstreaming^{tm}) were used in your school?

    - What has been the educational value of using this kind of technology in the classroom?
    - What did digital resources enable teachers to do that they would not previously been able to do?
    - How does this Video on Demand technology project compare to other technology initiatives you have been involved in at your school?

2. Please describe the technology infrastructure that has been available in your school during this pilot period (January –May, 2005)?

3. Was this level of technology infrastructure sufficient to support the use of these Video on Demand programs?

Now, I'd like to ask you some questions about your school and district's current activities and future plans for technology integration in instruction.

4. Are you aware of a school or district *mission* or *vision* for technology integration in support of academic programs in your school or district?

5. What kind of fiscal support do you feel is needed to fully implement a technology-based infrastructure that could support Video on Demand in your school?

6. In your opinion, if broadband access in schools is so widespread, why aren't more bandwidth-intensive applications like streaming video used by teachers and students?

7. What constraints or challenges would your school staff experience should your district decide to use Video on Demand products and services in the future?

8. Has technology integration for classroom teachers been a focus of school-wide or district-wide professional development in the past two years?

   If No, are there any plans to provide this kind of professional development in the coming years?

9. In your opinion and based on your experience, what kind of professional development and ongoing technical support would you like to see in place in your school to support Video on Demand and other integrative technologies in the classroom?

   - What entity could best provide professional development and technical assistance to teachers to fully utilize Video on Demand products and services?

10. Is there anything else you would like to add about the use of Video on Demand products and services in your school?

Appendix 6

NEW HAMPSHIRE STATEWIDE SURVEY of UNITEDSTREAMING VIDEO ON DEMAND USE

1. **Which of the following best describes your position?**
   - ❍ District Administrator
   - ❍ District Technology Director
   - ❍ School Principal or Vice Principal
   - ❍ Media Specialist / Librarian
   - ❍ School Level Technology Director
   - ❍ Classroom Teacher (K-12)
   - ❍ Other _____

2. **What grade(s) do you teach? (choose all that apply)**
   - ○ Kindergarten
   - ○ First
   - ○ Second
   - ○ Third
   - ○ Fourth
   - ○ Fifth
   - ○ Sixth
   - ○ Seventh
   - ○ Eighth
   - ○ Ninth
   - ○ Tenth
   - ○ Eleventh
   - ○ Twelfth
   - ○ Not applicable

3. **What subjects do you teach?** (choose all that apply)
   - ○ The Arts
   - ○ English as a Second Language
   - ○ English / Language Arts
   - ○ World Languages
   - ○ History
   - ○ Mathematics
   - ○ Music
   - ○ Science
   - ○ Social Studies
   - ○ Special Education
   - ○ Other _____

4. **How long have you been teaching?**
   - ❍ Less than 3 years

- ❍ 3-9 years
- ❍ 10-20 years
- ❍ 21 years or more
- ❍ Not applicable

5. **What is your gender?** (choose one)
   - ❍ Male
   - ❍ Female

   Now, we'd like to ask some questions about your use of television and video programming for instructional purposes.

6. **On average, about how often do you use television or video programming in classroom instruction?** (This includes programs taped off-air, viewed live, stored on VHS, DVD, laserdisc, CD-ROM, programs streamed over the Internet, or video conferencing) (Choose one answer)

   - ❍ Every day
   - ❍ 3-4 times a week
   - ❍ 1-2 times a week
   - ❍ About once a week
   - ❍ Less than once a week
   - ❍ Once a month
   - ❍ Less than once a month
   - ❍ Never

7. **On average, how much time do you spend on the Internet <u>at school</u>** (e.g. reviewing websites and video on demand products, using search engines to conduct research, etc.)? (choose one)

   - ❍ Less than one hour per week
   - ❍ 2-5 hours per week
   - ❍ 6-10 hours per week
   - ❍ 11-15 hours per week
   - ❍ More than 15 hours per week

8. **In the past 6 months, which of the following resources have you used in your work to find information to support instruction in your classroom?** (choose all that apply)

   - ○ **Instructional TV** (e.g. NHPTV overnight broadcasts)

   Television programs
   - ○ **Public Television (e.g. WGBH, WGBY, NHPTV, etc.)**
   - ○ **Discovery Channel**
   - ○ **Learning Channel**

- ○ **Other** cable channels _____

Video On Demand products

- ○ **Chalkwaves**
- ○ **unitedstreaming™**
- ○ **Think Port**
- ○ **Teacher Source**
- ○ **Teacher Domain**
- ○ **Other** _____

9. **How do you access these programs?** (choose all that apply)
   - ○ **Watching live TV broadcasts**
   - ○ **Taped off-air and viewed later**
   - ○ **Purchase of videotape or DVD**
   - ○ **CD-ROM**
   - ○ **Streamed via the Internet (viewed while online)**
   - ○ **Downloaded via the Internet and saved on the hard drive (viewed off-line)**
   - ○ **Stored on a local server, distributed via local network**
   - ○ **Video conferencing via Internet or satellite**
   - ○ **Other** _____

10. **What video related equipment, if any, is available in your classroom or at your school?** Please mark 'none' if you do not have video related equipment at your school. (choose all that apply)

    A computer with internet access for Teachers Only.
    At least one (1) computer with Internet access for *students*.
    Computer(s) with DVD-ROM drives
    Computer(s) with CD-ROM drives
    LCD Projector.
    TV with hook up to the computer for projection purposes.
    Media servers (for local storage of digital video).
    Video conferencing equipment.
    Video editing equipment.
    TiVo / Replay or other digital video recorder (DVR).
    Other

    - ○ The Equipment is located In my classroom.
    - ○ There is access to this Equipment at my school.
    - ○ None available.
    - ○ Don’t know.

If you answered 'Other' for question 10, please specify what equipment is available to your classroom or school

_____
_____
_____

11. **If you know your Level of Technology Integration (LoTi) level, please indicate it below. If you do not know your LoTi level, please check the statement that you think best describes your proficiency level with computers.** (choose one only)

- ❍ **Non-use** (Level 0)
- ❍ **Awareness** (Level 1) Technology is used by the teacher for management tasks like taking attendance.
- ❍ **Exploration** (Level 2) Technology-based tools supplement the existing instructional program.
- ❍ **Infusion** (Level 3) The use of databases, spreadsheets, multimedia and desktop publishing applications, and the Internet complement instructional events.
- ❍ **Integration** (Level 4) Technology-based tools are integrated in a manner that provides rich context for students' understanding of concepts, themes and processes.
- ❍ **Expansion** (Level 5) Technology access is extended beyond the classroom
- ❍ **Refinement** (Level 6) Technology is perceived as a process, product and / or tool for students to find solutions to “real-world” problems. There is no longer a division between instruction and technology use in the classroom.

Now we'd like to ask you some specific questions about your use of *unitedstreaming*™ clips and other *unitedstreaming*™ features and services.

12. **In the past six months, have you used *unitedstreaming*™ in the classroom to support instruction?** (choose all that apply)
    - ○ **To set the context for a lesson** (e.g. providing a video on pilgrims arriving in the new world and what they encountered before studying life in the Plymouth Colony).
    - ○ **To introduce new concepts before a lesson** (e.g. Learning the names for the various kinds of clouds in weather reporting and being able to identify those clouds before beginning a lesson on clouds).
    - ○ **To illustrate a point, enhance or expand a lesson** (e.g. Showing life in a village in the Andes while studying the people of South America; Showing a clip of Mt. St. Helens erupting in the 1980s while studying a unit on volcanos)
    - ○ **To reinforce, review, or follow-up on a lesson that has been taught** (e.g. Showing a video on geometry angles after having studied this in class).
    - ○ **To demonstrate something you can't show in any other way**.

- ○ **To engage groups of students or individual students in project-based assignments** (e.g. Giving teams of students a topic to research and having them use video clips to learn and demonstrate their research or evidence)
- ○ **To differentiate learning** (e.g. Setting up self-directed learning stations in which students can complete specific lessons on their own).
- ○ **Other** _____

13. **To what extent do you agree or disagree with the following statements regarding the use of *unitedstreaming*™ in your classroom?** (To answer, use the scale from 'Strongly Disagree' to 'Strongly Agree', below) (choose one answer for each statement)

'*unitedstreaming*™ programming...'

Is more effective in instruction than other types of technology (e.g. TV programs, DVDs, video-taped programs, the internet, etc.)	○ Strongly Disagree. ○ Disagree Somewhat ○ Neutral ○ Agree Somewhat ○ Strongly Agree
Is more effective in instruction when integrated with other types of technologies. (e.g. PowerPoint presentations, Internet hyperlinks, publishing software.)	
Helps me provide lessons that more effectively engage students and maintain student interest in learning.	
Helps me provide more creative lessons that enhance or expand presentations.	
Helps me develop more project-based lessons for my students.	
Helps me develop more small-group and individualized instruction.	
Help me differentiate instruction to address the learning needs of all students.	

If you answered 'Other' for question 13, please specify a statement about classroom use of *unitedstreaming*™, that you agree or disagree with

_____
_____
_____

14. **To what extent do you agree or disagree with the following statements regarding students' use of and satisfaction with *unitedstreaming*™ clips and features?** (To answer, use the scale from 'Strongly Disagree' to 'Strongly Agree', below) (choose one answer for each statement)

Is preferred by students over other types of technology (e.g. TV programs, DVDs, video-taped programs, the Internet, etc.)	○ Strongly Disagree ○ Disagree Somewhat ○ Neutral ○ Agree Somewhat ○ Agree Strongly
Increases student enthusiasm and motivation to learn.	
Stimulates student creativity and problem solving.	
Stimulates student discussions and active learning.	
Encourages students to more actively use critical thinking skills (e.g. analysis, synthesis, evaluation).	
Encourages students to work in small groups on project-based or inquiry-based learning projects.	
Encourages students to engage in more independent learning.	
Other	

If you answered 'Other' for question 14, please specify a statement regarding students' use and satisfaction with *unitedstreaming*™ clips and features that you agree or disagree with

_____
_____
_____

15. **What viewing arrangements have you used in the past six months to use *unitedstreaming*™ clips with students?** (choose all that apply)
    - ○ Whole classroom instruction over TV or LCD projection
    - ○ Whole classroom or lab instruction with each student viewing independently on a computer
    - ○ Small groups work with several students on one computer.
    - ○ Independent Student-Centered Work
    - ○ Individual or Group Project-Based Learning.
    - ○ Other _____

16. **In your opinion, are there particular learning situations where the use of *unitedstreaming*™ is especially effective** (e.g. with certain groups of students or with specific content)**? Please provide examples.**

_____
_____
_____

17. **To what extent did you use the following *unitedstreaming*™ features this year in your classroom instruction?** (Please choose the appropriate frequency response for each feature.)

Full length video clips (15 minutes or more)
Medium video clips (5-10 minutes)
Short video clips (< 5 minutes)
Subject search feature
Grade Level search feature
Keyword search feature
Hyperlink feature
Embedding video in PowerPoint
Lesson Plans that accompany the product
Content aligned to NH State Standards feature
Student Quizzes
Quiz Summary (student grade reports)
Student games and activities
Other

- ❍ Never Used
- ❍ Rarely Used (once or twice during the school year)
- ❍ Used Occasionally (several times a month)
- ❍ Used Frequently (at least once a week)

If you answered 'Other' for question 17, please specify which *unitedstreaming*™ features you, to some extent, used in your classroom this year for instruction.

_____
_____
_____

18. **Overall, how satisfied are you with the quality of *unitedstreaming*™ video clips on the following factors related to classroom instruction?** (choose all that apply)

Topics are current.
Treatment of content is accurate.
Breadth of content available (e.g. amount of content areas and topics available).
Depth of the content available (e.g not a surface or superficial treatment).
Technical quality of videos.
Grade level appropriateness of the videos.

- ❍ Not Satisfied
- ❍ Somewhat Satisfied
- ❍ Very Satisfied
- ❍ Don't Have Experience or Knowledge

Instructional quality of the video (e.g. can be used in segments or in whole programming (full content treatment) format).

Other.

If you answered 'Other' for question 18, please specify what other factors related to classroom instruction you are satisfied or not satisfied with, in regard to *unitedstreaming*™ video clips.

_____

_____

_____

19. **To what extent was technical and instructional support available at your school or district to support your use of *unitedstreaming*™ video clips and features?** (choose all that apply)

Technology support person (e.g. support in using equipment, accessing Internet, integrating PowerPoint, troubleshooting glitches, etc.).

Instructional support person (e.g. support in integrating video on demand clips into lessons, lesson planning, etc.).

Other.

- ○ Available at the school level within one working day.
- ○ Available at the district level within one working day.
- ○ Not available.

If you answered 'Other' for question 19, please specify what other factors related to classroom instruction you are satisfied or not satisfied with, in regard to *unitedstreaming*™ video clips.

_____

_____

_____

20. **Did you participate in any training or professional development (online or face-to-face) provided by *unitedstreaming*™** (choose only one)

- ❍ Yes
- ❍ No

21. **If you answered 'Yes' to question 20, please describe the kind of professional development or training you received.**

_____

_____

_____

22. **Overall, how satisfied were you with the quality of the *unitedstreaming*™ training or technical assistance you received?**

Training or Professional Development.
Technical Assistance.

- ❍ Not Satisfied.
- ❍ Somewhat Satisfied.
- ❍ Very Satisfied.
- ❍ Don't have experience or knowledge.

23. **In the future, what kind of professional development or technical assistance would you like to see in place to support your use of *unitedstreaming*™ in the classroom?** (click all that apply)

- ○ Workshops to develop technical expertise in using video on demand products in instruction.
- ○ Workshops on how to design and deliver effective instruction using video on demand technology.
- ○ Subject-specific training related to curriculum development, lesson plans, and pedagogy using video on demand technology.
- ○ Collaborative seminars with teacher colleagues to exchange ideas and discuss how to use new video on demand tools and features.
- ○ Workshops on how to manage video on demand products using various student arrangements (e.g. whole classroom, small group work, independent study, etc.).
- ○ Workshops on how to engage students in project-based instruction.
- ○ Access to a web repository of reviewed and recommended clips and lesson plans tied to state standards and video on demand products.
- ○ Other _____

24. **Would you recommend the use of *unitedstreaming*™ to other teachers?**
- ❍ Yes
- ❍ No

25. **Is your school planning to purchase *unitedstreaming*™ in the coming school year (2005-2006)?**
- ❍ Yes
- ❍ No
- ❍ Not Sure

26. **Is there anything else you would like to tell us about the use of *unitedstreaming*™ or other video on demand products for the classroom?**

_____
_____
_____

Thank you for your responses to this survey.
Click 'Submit Survey' to send in your answers.