2014 State Educational Technology Needs Assessment

Report Submitted to the Nevada Commission on Educational Technology and the Nevada Department of Education

UNLV

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Executive Summary

Overview

In an effort to provide input about to the Nevada Department of Education and the Nevada Commission on Educational Technology, this document reports the findings of the 2014 biennial State Educational Technology Needs Assessment (SETNA). This needs assessment is guided by the requirements and mandates established in the 2007 Senate Bill (SB184) and NRS 388.795. Pursuant to sections 19.6a-b and 27.1-27.3, this needs assessment addresses: a) educational technology infrastructure and plans, b) the integration of educational technology for achievement and proficiency of students, and c) the feasibility of using technology in lieu of traditional methods (e.g., textbooks).

The SETNA 2014 is a summary of data collected over a period of several weeks, beginning in March in some districts and continued through May. Surveys of teachers, technology coordinators, and parents of the 17 school districts in Nevada were used to address the key questions.

Infrastructure

With respect to technology infrastructure, the findings indicate that Nevada has made considerable progress when compared to previous iterations of the SETNA. For example, there is some increase in technology saturation and student access to technology. As with previous years, results indicate that 99% of Nevada classrooms have at least one computer for teacher administrative use (i.e. attendance, lunch count, etc.), which teachers find easy to use (93%). Teachers also report a device for instructional purposes in 95% of their classrooms, the most common use of which is for projecting lessons. However, there was considerable increase in the number of teachers reporting at least one device that students are able to use in their classrooms (94%), which changed from 75% in SETNA 2012.

For each type of device, teachers report that the average age range is 3 to 5 years and most devices are in good working condition (58%). This aligns with the 4-5 year purchase cycle reported in most district technology plans. However, it should be noted that some teachers report ages that are in excess of 10 years for a range of devices, including calculators and

computers. These are typically in rural districts (i.e., Esmeralda County, Eureka County, and Humboldt County).

Concerning the connectivity, teachers report that nearly all of the devices have at least a wired Internet connection (58%, with 6% not sure) that is stable (*agree*, 49%, *strongly agree* 16%). When wireless is available (58% report having access, 5% unsure), many teachers indicate that the connection is unreliable. Only 39% *agreed* or *strongly agreed* that their wireless connection was stable, while 25% *disagree* or *strongly disagree*. Overall, teachers indicated that the connection is adequate to the common task of streaming video, 58% indicated that the video would play at an acceptable speed (average or better), while nearly 13% indicated that it would play very slowly. However, technology coordinators expressed concern over increased network demands as shifts in practices begin to include additional Internet resources, flipped classrooms, and online methods.

While the Smarter Balanced Assessment Consortium (SBAC) field test is currently underway, these data indicate that Nevada is almost ready to engage in computer-based testing. Although there remain 14,022 students without adequate access to devices and bandwidth to engage in testing, these schools have been identified for remediation. These changes reflect considerable effort and allocation of resources to accomplish this goal. There is a considerable difference between Nevada's readiness as described by SETNA 2014 when compared to SETNA 2012. Per pupil to device ratios have improved to 4:1 or better in most schools. Similarly, Internet bandwidth has improved to at least 20 Kbps in all but a few schools. However, SBAC compliance is for all students and all schools. Further, there is still some concern over Nevada's future readiness for online testing and content delivery if existing funding struggles and inconsistencies across the state are not addressed.

School Wide Access

Generally speaking, districts and schools provide checkout procedures for most of the technologies in schools, from LCD projectors (71%) and Smart Boards (54%), to digital cameras (still, 55%; video, 46%) and visualization/graphic organizers (41%). Overall, the variety of technologies that are widely available in Nevada schools remains relatively unchanged when compared to previous evaluations. A surprising trend was the prevalence of LCD projectors in classrooms, which had declined from SETNA 2010 to SETNA 2012 (64% to 58%, respectively),

but increased slightly during this evaluation (66%). The LCD projector was reported to be the most common, non-computer tool in the classroom, with the interactive white board coming in closely behind (53%). Although these tools are not necessarily permanent fixtures in all classrooms, most teachers reported that they had the ability to check them out for temporary use (71% and 54%, respectively).

Teacher Practices

The data in SETNA 2014 highlight trends in teacher practices. As indicated above, teachers use the LCD project most often. When asked about their practices, they typically engage in presentation or demonstration activities. This approach differs from the typical pedagogies exemplified in 21st Century ecologies, which are more interactive, dynamic, data based, and student oriented. A conclusion from the SETNA 2012 was that the growth in interactive white boards reflected a change in purchasing paradigms. However, given the trends in the time using presentation software on a daily or weekly basis (43.5%) to present material to students often (55.3%) or exclusively (21.4%), there may not be a corresponding change in teaching practices to leverage the capabilities of the new tools. This disparity is also apparent when examining the availability of other instructional tools (e.g., student email) and their use (infrequently or never, 54.3%). What appears evident from the findings is that teachers' practices favor aging resources and tools, even though more advanced technology may be available. Although there is the general opinion that teachers are prepared to engage with contemporary practices, they adhere to more traditional methods. This may be explained by the numerous barriers to judicious technology integration, such as Internet access (slightly more than half of teachers, 56% consider their school's Internet filter to be too restrictive), access to specific software and tools, and training, which teachers find to be unrelated, unhelpful, and more negative than positive.

Student Use

The Nevada Educational Technology Survey data, combined with data from teacher surveys and Technology Coordinators appeared to correspond with parents' recollections of their children's activities. When parents were surveyed, nearly 90% of the sampled responses indicated that their children were using technology to engage in curricular activities during school. Collectively, these findings reflect modest gains over previous years in both saturation

of technology for instructional purposes, typically within acceptable age limits, as well as gains in student use. However, they also reflect no change with respect to in-classroom student access. Overall, teachers have reported student to device ratios that range from 1:1 or better in some schools, to as little as 25:1 in others. Based on the data, 157 schools have a ratio in excess of 4 students per device.

What is also a concern is the nature of student use. Teachers are the most frequent technology users in Nevada classrooms, which is partly due to unmanageable device to student ratios and issues associated with student access. The most common student activities include Internet research (82%), word processing (73%), work with content specific applications (66%), use of LCD projector (65%), use of Smart Boards (60%), and making presentations (59%). Each activity occurred at least some of the time (i.e., *infrequently*, *weekly*, or *daily*). Other activities include library research, video streaming, and use of drill and practice software.

Capacity for the Future

Teachers report that they are prepared to use and capable of using most contemporary technologies for instructional purposes. For example, 71% indicate that they are at least *prepared*, *well prepared*, or *very well prepared* to use mobile devices in the classroom. However, fewer teachers (44%) indicate they are at least *prepared* to utilize content management systems (e.g., Canvas, Moodle). In part, this bodes well for emerging instructional contexts (e.g., Bring Your Own Device, or BYOD). Unfortunately, there remain gaps in readiness and goals as specified in the state and district educational technology plans. Similarly, there remain issues in pockets throughout the state concerning access to devices, access to sites, bandwidth, and security, as reported by the technology coordinators.

Responses from technology coordinators throughout the state in conjunction with inferences drawn from teacher surveys indicate that, in general, funding is both inadequate and inconsistent. The majority of technology coordinators have requested that the technologies that are secured through grant funds are helpful, but it is necessary to secure a technology budget. Although reports indicate that progress is ongoing, these issues must be addressed.

General Implications and Findings and Research Questions

Overall, the findings indicate that districts have been working to meet the goals stated in their educational technology plans. In turn, this works to meet the goals of the state educational technology plan. The overall process of conducting the SETNA 2014 was facilitated on multiple levels, from the Nevada Department of Education to technology coordinators within the districts. Interpreted in combination with the positive response rates and comments, there is a clear sense that teachers and administrators appreciate the jobs that are undertaken; the issues that have arisen are associated with resources and policy, rather than human capital. In addition to that observation, the following trends are clear:

1) The infrastructure continues to improve and Nevada schools are nearly completely ready for the SBAC assessments; pilot testing is currently underway
2) Technology has become saturated in schools throughout the state, though student to device ratios are far from target (i.e., 1:1)
3) Although the average age is approximately five years per device, there is considerable inconsistency in the age of devices across districts
4) While current technology levels are have improved in terms of connected devices per pupil, there are areas of concern in several districts
5) Teachers regularly use a variety of tools to teach, however those tools do not often extend to student use (e.g., presentation software, Internet research, word processing)
6) Teachers are do not feel adequately prepared to enter the 21st Century teaching ecology (e.g., device-based instruction, e-books, hybrid learning)
7) Bandwidth is wildly inconsistent across districts, depending upon school size
8) Teachers are critical of the Internet connection
9) Some tools are approaching "saturation," including LCD projectors, productivity software, and interactive whiteboards
10) Teachers report that their professional development is not meeting their needs;
11) Teachers report that the characteristics of their PD are contrary to the literature on successful PD (e.g., collaborative, ongoing, interactive, relevant)
12) Technology use patterns imply a direct-instruction or lecture-based ecology

Section 1: At a Glance

Purpose and Organization:
- Guiding research questions

District Sizes:
- Small (< 2,000 students)
- Medium (2,000 – 20,000)
- Large (> 20,000 students)

Section 1: Overview

This section provides an overview and context for the State Educational Technology Needs Assessment, 2014.

Purpose

The purpose of this Report is to present the findings of the 2014 State Technology Needs Assessment (STNA) for Nevada school districts. The needs assessment was guided by the requirements set forth in SB184 (sections 19.1d, 19.6a-b, and 27.1-27.3) and by the first needs assessment conducted in 2008. To address these requirements, the following research questions guided the STNA in 2008, 2010, and 2012 and remain the guiding questions in 2012:

1. What is the current status of the state and district educational technology plans?
2. In what ways can educational technologies, such as computer-based assessments, laptop computers, and Web-based tools, improve instructional development, delivery, and assessment in Nevada?
3. What is the current capacity of schools in Nevada to influence the achievement of students with educational technologies?
4. How prepared are Nevada teachers to integrate technology into their classrooms?

Organization

This report contains results organized by the research questions. This section (Section 1) provides an overview, purpose, and context for the report. The second section (Section 2) illustrates the methods and design of the data collection undertaken expressly for this assessment. Sections three through six provide a response to the research questions above. Part 3 deals with Nevada's educational technology plans and their impact. Section 4 characterizes the potential for educational technology in Nevada. Section five highlights the current capacity of Nevada's schools. And section six addresses the preparation of teachers in Nevada to engage in judicious technology integration. Each section three through six represents the triangulation of multiple data sources and includes trends over time, wherever possible. Finally, sections seven and eight address the future of Nevada's educational technology as well as this report's summary findings and recommendations.

District Categories

In many ways, Nevada is unlike any other state in the union. Nevada covers 110,567 square miles but has a population that slightly exceeds 2.7 million residents. Although Nevada is geographically expansive, more than 2.3 million people are concentrated in one of two metropolitan areas: the Las Vegas and the Reno-Sparks areas with 1.9 million and 400,000 residents, respectively. The remaining population of approximately 400,000 is distributed among much smaller towns and centers that are unevenly dispersed over the remaining 96,050 square miles. School districts in Clark County (Las Vegas metropolitan area) and Washoe County (Reno/Sparks metropolitan area) serve approximately 88% of the Nevada student population. The other 15 counties, their school districts and local education agencies (LEAs), provide education for fewer than 10,000 students each, or 15% of Nevada students. To illustrate the range of size, the Clark County School District serves 311,029 students (73.7% of the Nevada students) while Esmeralda County LEA has 67 students (http://www.nevadareportcard.com/di/). Consequently, it is necessary to examine the salient traits across districts while recognizing the individual needs that result from this tremendous diversity in size and scale.

Whenever possible, this report will leverage available data to describe the unique needs of the districts as well as the state as a whole. For parsimony and statistical power, this report will also refer to large, medium, and small school districts using the conditions listed in Table 1 (organized from smallest to largest enrollment; NVDOE, 2013). This aligns with previous iterations of the SETNA (i.e., 2008, 2010, and 2012) and provides a more intuitive scheme to interpret the data.

Table 1: District Size Definitions

Size	Student Enrollment	Districts
Small	< 2,000	Esmeralda, Eureka, Storey, Mineral Pershing, Lincoln, Lander, White Pine
Medium	2,000 – 20,000	Humboldt, Churchill, Nye, Douglas Carson, Lyon, Elko
Large	> 20,000	Washoe Clark

Section 2: Needs Assessment Design and Methods

The State Educational Technology Needs Assessment (SETNA) 2014 was designed to capture data from key constituencies throughout the state (i.e., teachers, parents, and technology coordinators) in an effort to inform the Nevada Commission on Educational Technology, pursuant to the 2007 Senate Bill (SB184). The primary sources of these data were web-based surveys distributed via Qualtrics Survey Software™ to the 17 districts throughout Nevada.

Section 2: At a Glance

Methods:
- Survey teachers, parents, and technology coordinators in all 17 school districts
- Representative samples
- 3,500+ teachers completed the survey

Revisions:
- Focus groups with CCSD technology coordinators and coaches
- Update, revise, reword, and replace items
- Teacher survey expanded to 45 items, collectively based on technology plans, previous suggestions, and focus group feedback

Additional Data:
- Educational Technology Plans
- Nevada Educational Technology Survey (NETS)
- Smarter Balanced Assessment Consortium (SBAC) readiness test
- Education Superhighway results

Development of the Surveys

Pursuant to the requirements and mandates established in the 2007 Senate Bill (SB184), the SETNA 2014 was built upon previous iterations of the needs assessment. In addition, SETNA 2014 was undertaken with two additional goals: a) to maintain some element of data integrity for exploration of change over previous iterations; and b) to update the items from previous implementations based on prior recommendations. Revisions were made based on expert review from evaluators as well as a focus group conducted with technology leaders and coaches from CCSD. Although many items in the SETNA 2014 were similar to previous years, there were also many changes and updates.

Teacher Survey

Focus Group

In December 18th 2013, a focus group of technology leaders and coaches was convened at Clark County's Curriculum and Professional Development Division. A total of six professionals met to discuss the teacher survey. Discussion lasted approximately two hours. The main

purpose of this focus group was to validate the existing items and revise content. Specifically, the coordinators and coaches were asked the following questions:

1. Given a list of technology devices, which are present in Nevada classrooms? Which technologies are not represented in the list?
2. As a technology specialist, what information would you like from the teacher survey?
3. In general, what training and/or skill do teachers need?
4. In what ways are resources in place to facilitate teacher skill development? What new resources are necessary?
5. Given a copy of the teacher survey, what changes would you make?

Overall, the results of the focus group provided valuable insight into the current tools available in classrooms. According to the discussion, the survey reflected several missing or underdeveloped themes, including: 1-1 initiatives, bring your own device (BYOD), hybrid classrooms, flipped classrooms, and social media. Further, the item stems tended to overgeneralize important technologies, such as iPads, iPods, Chromebooks, and projection tools. Additionally, the group discussed the importance of evaluating professional development in deeper way, particularly as they relate to issues of training, motivation, and practice. Whenever possible, the group indicated that questions should focus on elements or aspects of use, usefulness, and impact rather than an inventory of available resources.

In addition to results from the focus group, themes from the district educational technology plans were used to further inform the changes to the SETNA. Specifically, all district technology plans included components related to collaboration among professionals, as well as details about professional development. For districts, an important component of successful professional development focuses on practices and the implementation of training. Districts have also indicated the importance of tools like social networking, handheld devices, and alternative pedagogies in courses, whether or not those are delivered online, in a hybrid format, or in person. Ultimately, district technology plans aim to prepare students to leverage 21st Century skills in a modern, global climate.

Survey Revisions

Based on this collective information, the total number of items on SETNA 2014 grew to 44. By contrast, the SETNA 2012 instrument contained 39 items. More importantly, some items were eliminated and replaced with alternative items with the same theme. Other items were reworded and/or expanded to reflect the themes that were highlighted during the focus group. Some items included the type and quality of the Internet connection (wireless or wired), preparation for technology integration, technology experience, expanded list of technologies, and teacher practice.

The teacher survey contained 44 questions (Appendix A) and was intended to evaluate the technology capacity of classrooms, schools, and districts, as well as teachers' preparation and professional development experiences. In addition to the major themes that were present in SETNA 2008, 2010, and 2012, SETNA 2014 approached the assessment along distinct areas associated with, a) classroom-based technology infrastructure, b) preparation to use technology, c) in-practice professional development, d) school culture with respect to technology, and d) technology use. Based on these categories, Table 2 provides a summary of some of the sample items from the teacher survey.

Table 2: Teacher Survey Sample Items

Category	Item
Infrastructure	In my classroom, I have at least one device that students can use for instructional purposes. If yes, state how many.
	In general, I find the wired connection to be dependable.
	The devices in my classroom have a wireless connection to the Internet.
Preparation	Please indicate the degree to which you are currently prepared to use the following tools for instructional purposes (e.g., podcasts, databases, e-mail, interactive whiteboard).*
	Please indicate the degree to which you are currently prepared to accomplish the following (e.g., 1-1 classroom, digital materials, access and use standardized test data).*
Professional Development	Please rate your agreement with the following statements as they relate to your technology professional development opportunities (e.g., ongoing, apply what you learn, standards-based, appropriate to my area).**
Classroom Use	Please indicate how frequently the tools are used in your classroom (e.g., handheld device, podcast, scanner, camera, content management system).*
	What best describes your current practice of using technology in instruction?*
School-wide Use	Through a sign up or checkout procedure, I can arrange to have the following technologies available for a finite time in my classroom (e.g., audio/video editing, voice amplifier, digital camera, image editing, database tools, LCD projector).**

*Indicates a new item. **Indicates a revised item.

Parent Survey

The parent survey (Appendix B) contained eight, short but open-ended items pertaining students' use of technology in schools. These items were unchanged from previous iterations of the SETNA and aligned with SETNA 2008 and 2014.

IT Coordinator Survey

The IT Coordinator survey (Appendix C) contained sections on: capacity, planning, role of technology, and professional development. Each item was left as an open-ended response. The survey was unchanged from previous iterations of the SETNA and aligned with SETNA 2008 and 2012.

Distribution

Beginning in March 2014, data collection was initiated with an email to superintendents, principals, and technology coordinators. These communications were facilitated via the Nevada Department of Education. The team sent email "letters" with an introduction to the SETNA 2014 and instructions on how to participate, including a link to the appropriate survey. Letters can be found in Appendix D. Approval from the Internal Review Board for Clark County was secured prior to data collection in that district with the assistance of the office of Instructional Technology and Innovative Projects, Curriculum and Professional Development Division.

The approach to distribution of these surveys was conducted via the office of the superintendent, with assistance from the Nevada Department of Education. In the case of Clark County, approval was necessary prior to widespread distribution via the superintendents, principals, and technology coordinators.

Teachers

Following previous methods, SETNA 2014 provided all teachers in all districts with the opportunity to participate in the assessment and respond to the survey. Teachers were contacted via superintendents, principals, and technology coordinators using existing email systems in the districts. Each level of supervisor was sent a customized letter with the link and information to the teacher survey. Teachers were emailed a link to the appropriate survey

hosted by Qualtrics™. Data were collected anonymously. Once collected, the data were coded and sanitized for any identifying characteristics. Specifically, IP addresses were used to identify district location but subsequently deleted. Using this approach, 4,386 teachers attempted the survey. A total of 3,645 responses were completed. All but 68 of these responses surveys were assigned to one of 17 districts. From the remaining 3,577, 66% were from Clark County and 20% were from Washoe County (2,401 and 733 responses, respectively). The remaining 12% of responses were from all other districts (443 completed surveys). The final sample of teacher surveys was determined to be consistent with previous years and acceptable in terms of its ability to accurately represent the overall population in the state. Figure 1 represents the IP address locations of individuals completing the surveys.

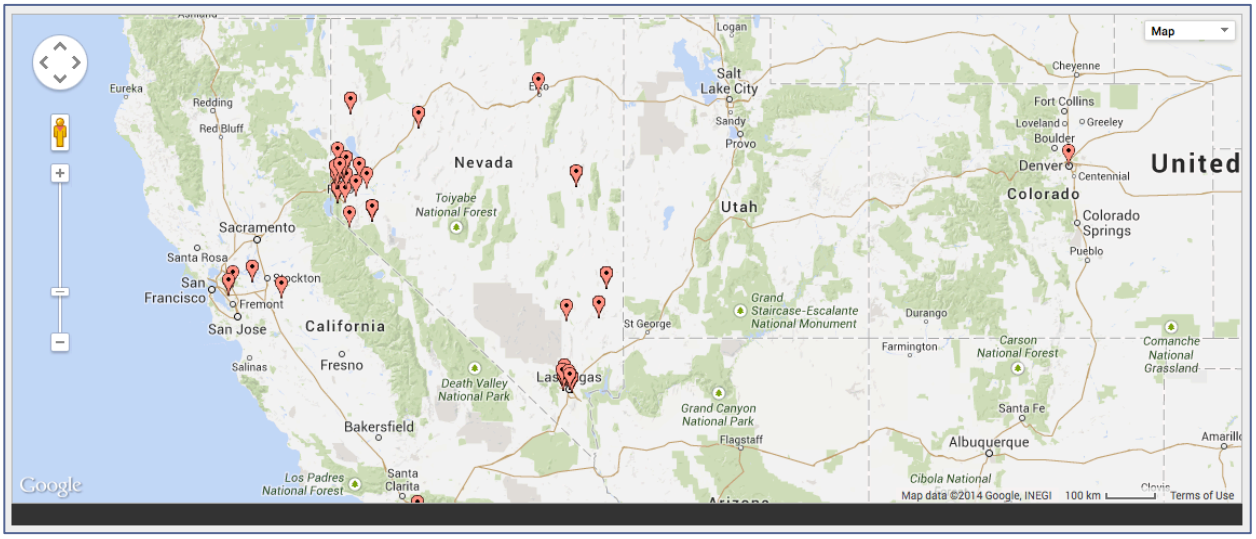


Figure 1: Cluster Map of Incoming Survey Attempts

The majority of participants completed the teacher survey in 10-30 minutes online. However, some participants took longer (40 minutes to one hour) to complete the survey. Typically, surveys were completed during school hours, with fewer than 10% of attempts occurring after 3 pm.

Parents

Superintendents and principals throughout Nevada were emailed information regarding all of the surveys. In particular, they were asked to send parents of students an email with directions and a URL to the parent survey. The parent survey took approximately 10 minutes to complete online, with a few (15%) taking slightly longer.

In total, participants attempted 3,503 surveys. Only 287 attempts were incomplete and unusable.

IT Coordinators

Technology Coordinators at the school and district levels throughout Nevada were emailed a URL to the IT Coordinator survey, which took between 10 and 35 minutes to complete. Of the 24 attempts, only 13 participants successfully completed the survey.

Limitations and Constraints

SETNA 2014 and Previous implementations of the SETNA (i.e., SETNA 2010, 2012) received 50% of the funding that had been allocated to SETNA 2008. Although constant for three iterations, the funding limited the team's ability to execute changes and revisions to the survey at a level commensurate with the changing demographics of Nevada and the maturing technologies. As such, the team was able to make some modifications to the Teacher survey, but did not have the resources to examine the remaining surveys and consider possible updates. Further, these constraints also limited analyses with respect to the Nevada Educational Technology Survey, as was done in the past.

Given the interest in preserving many of the items while aligning the survey to contemporary technologies and issues, the survey increased from 39 to 45 questions. Some of the new questions had multiple parts. Ultimately, there was an increase in the amount of time required to complete the survey. Specifically, some participants spent 40 minutes to an hour completing their responses. While the majority of responses were completed in 10 to 30 minutes, the amount of time that was spent on these items could call the sample into question. Specifically, there may have been additional dropouts when compared to previous years due to the slightly increased length. It is recommended that future iterations of SETNA consider a judicious balance between depth and breadth while preserving the ability to address the research questions in a meaningful way.

Other Data Sources

In addition to the surveys conducted expressly for this needs assessment, the evaluation team examined data from a variety of other sources. These include the State and District Educational

Technology plans, the data repository (e.g., Annual Report Card) hosted by the Nevada Department of Education, the Nevada Educational Technology Survey (NETS), the Smarter Balanced Assessment Consortium (SBAC) readiness test, and results from a state sponsored Education Superhighway study.

Section 3: At a Glance

Goals:
- All plans included goals related to infrastructure and communication, PD, and technology integration
- Some small and large districts expand plans based on individual needs

Funding:
- Inadequate and inconsistent; reliant on grants
- After direct funding from district lines, budget gaps are closed using bonds and grants from state and federal sources
- Using Title I and Title II money when appropriate and possible
- One-time expenditures that serve to supply technology but not service or support it

SBAC readiness:
- 75% of schools (426) device ready
- 83% of schools (474) bandwidth ready
- Mostly ready: only 14,022 students unprepared

Accomplishments:
- Districts have made progress toward goals, including Internet access, wiring, and infrastructure

Section 3: Technology Infrastructure and Technology Plans

The sources of data in this section include the educational technology plans from the state and the districts, as well as data from technology coordinators, the Nevada Education Superhighway study, and the Nevada Educational Technology Survey (NETS).

This section addresses the two guiding questions:

1) *What is the current status of the state and district educational technology plans?*

2) *In what ways can educational technologies, such as computer-based assessments, laptop computers, and Web-based tools, improve instructional development, delivery, and assessment in Nevada?*

State Plan

Although the state of Nevada's State Educational Technology Plan (2009-2014) is due for a review, it is still in place at the time of this writing. A diverse group of committee members from international/national (International Society for Technology in Education, ISTE), state (Nevada Department of Education, Nevada System of Higher Education), and district levels (both rural and urban), as well as constituents from the parents association and public broadcasting, created this document, which resulted from careful consideration of state needs and goals as the state's educational agencies prepare students for the 21st Century. The state plan aligns thematically and ideologically with the national technology plan (http://www.ed.gov/technology/netp-2010).

This discussion lead to careful articulation of an underlying ideology based on the *2008 Nevada State Improvement Plan*, global trends associated with 21st Century schools and learners, and

a need to foster collaboration among stakeholders and constituents. Broadly, three goals drive the district plan. Specifically, the goals were:

1. Robust infrastructure and connectivity supporting digital-age learning and teaching,
2. Professional growth for educators to improve student learning with technology, and
3. Instructional technology integration across the curriculum to engage digital learners.

This document and a corresponding template for technology planning was made available to every district throughout the state and served as a model for local technology plans for many of those districts. Each district interpreted the state plan in the context of their realities and needs. Typically, districts created their own goal statements and a guideline or matrix to accomplish the plan. Although most districts used the state plan as a model, some districts created unique plans. In each case, districts created plans that aligned with local and federal guidelines (SEC. 2414 of NCLB) associated with technology planning and funding (http://www.doe.nv.gov/Offices_APAC_Program_Accountability_Educational_Technology/).

District Plans

Each of the 17 districts throughout Nevada has a technology plan in place, although some are out of date and require a published revision. The majority of these plans are based on the State Educational Technology Plan (2009-2014). Although there is some variation, all plans address the three goals articulated in the state plan: 1) infrastructure and connectivity, 2) professional development and growth, and 3) instructional technology integration.

All of the medium category schools used the NV plan. Schools with unique needs modified, added, or designed their own plan. Themes common to smaller districts included careful attention to standards and technology. Many included connections to classroom objectives across the grade levels (e.g., Storey County Educational Technology Plan (2011-2013) and Eureka County Educational Technology Plan (2006-2011)).

The largest district completed an independent plan. This plan exhibited many of the state themes but also expanded upon them to include goals that are unique to Clark County. For example, Clark included a section that focused on the business of education and its systems and services. While many districts may be able to coordinate data policies and assessment plans, the scale and complexity of Clark requires a formal plan to address the issues. Some

recommendations include forming a governing body, establishing a process for data ownership, cultivate a culture of data awareness and decision making, and establish a standardized set of business practices across the district.

Currency of Plans and Updates

Among the 17 districts, 11 have plans that are current at the time of this writing with no update pending or required. Since the previous review, six districts published updates to their previous educational technology plans. Specifically, Carson County (2013-2016), Clark County (2012-2017), Douglas County (2013-2017), Esmeralda County (2013-2016), Lincoln County (2012-2015), and Mineral County (2012-2015) updated their plans. When reviewing the remaining six, three plans were valid through 2013 but are expired as of this writing (Elko County (2010-2013), Lyon County (2010-2013), and Storey County (2011-2013)). An updated plan was not available for these districts. The final three plans expired two to four years ago. These plans come from much smaller districts: Eureka County (2006-2011), Pershing County (2008-2012), and White Pine County (2009-2010). These districts regularly report that they have limited resources to enact the plans and/or update them. Table 3 highlights some of the key attributes associated with the educational technology plans in the districts.

Table 3: District Technology Plan Information

District	Dates	Current	Model	Students	Additional or Alternate Goals	District Size
Carson	2013-2016	Yes*	NV Plan	7,545		Medium
Churchill	2011-2014	Yes	NV Plan	3,740		Medium
Clark	2012-2017	Yes*	Own Needs	311,029	Business of education	Large
Douglas	2013-2017	Yes*	NV Plan	6,121		Medium
Elko	2010-2013	No	NV Plan	9,841		Medium
Esmeralda	2013-2016	Yes*	Own Needs	67	Curricular goals; Adult literacy	Small
Eureka	2006-2011	No**	Own Needs	271	Student, teacher, and administrative goals	Small
Humboldt	2011-2014	Yes	NV Plan	3,501		Medium
Lander	2009-2014	Yes	NV Plan	1,093		Small
Lincoln	2012-2015	Yes*	NV Plan	977		Small
Lyon	2010-2013	No	NV Plan	8,059		Medium
Mineral	2012-2015	Yes*	Own Needs	501	Curriculum goals; Funding goals	Small
Nye	2011-2015	Yes	NV Plan	5,361	Curriculum goals	Medium
Pershing	2008-2012	No**	Own Needs	708		Small
Storey	2011-2013	No	Own Needs	416	Repairs and supplies; Scheduling; Upgrades and replacements	Small
Washoe	2012-2015	Yes	NV Plan	62,424		Large
White Pine	2009-2010	No**	NV Plan	1,407		Small

*Reflects an updated technology plan. **Reflects a plan that has been expired for two or more years.

Carson County Educational Technology Plan (2013-2016)

The Carson County Educational Technology Plan (2013-2016) is modeled after the state plan. This includes goals associated with infrastructure and communication, professional growth and development, and technology integration. In addition to these goals, the Carson County plan focuses on access, achievement, increasing graduation rates, decreasing dropout rates, and decreasing college remediation rates.

Carson County has leveraged funds from a variety of sources to secure critical technologies for the district, including: interactive white boards, document cameras, computers, and mobile devices. Notably, a 1-1 mobile pilot project has already impacted numerous administrators, teachers, and students throughout the district. Ultimately, Carson County views technology in the capacity to facilitate learning for all, with an emphasis in community partnerships, health and wellness of its students, and an action matrix to accomplish the plan.

Clark County Educational Technology Plan (2012-2017)

Although Clark County's previous educational technology plan was approved until 2013, the district has published revisions valid until 2017. This five-year plan reflects a significant undertaking spanning 18 months by a committee whose composition included 35 individuals from various constituencies. The committee developed the plan as a result of continuous inquiry, strategic data gathering in the community, and systematic discussion. The plan was developed with three ideologies in mind: a) increase academic achievement through personalized learning via technology, b) position CCSD as a high-tech district with a next-generation ecology of teaching and learning, and c) reform the infrastructure associated with the business of education, including a vibrant, data-informed, streamlined "system of systems," aligned to the vision and mission of the organization. In pursuit of this, the Clark County Educational Technology plan established the current state of the district and the gap between that state and its goals along five distinct dimensions. These included: I) teaching and learning environments, II) business of education systems and services, III) end-user access and support, IV) infrastructure and communication systems, and V) a system to ensure sustainability and currency.

Many initiatives reflect the unique demands associated with Nevada's largest district, such as the need to establish consistency in professional development and a system of systems to

engage in the business of educating students. Although there are pockets of excellence within the district, there is no systematic mechanism to share these experiences. Similarly, there is no repository of data regarding what works and in which environments. Rather, schools typically employ *ad hoc* methods as opposed to standardizing them across the district. Clark County reports a variety of inconsistent resources and experiences throughout the district. In addition to the educational themes associated with the state plan, CCSD also reports a significant role of technology in district administration. Enterprise architecture is required simply to manage issues of reports, HR/payroll, standards, data, and governance.

With respect to infrastructure, Clark County currently boasts a Gigabit wide area network (WAN) that connects metropolitan schools across the district, including 32,000 VOIP phones. Other schools connect via available resources.

Douglas County Educational Technology Plan (2013-2017)

The Douglas County Educational Technology Plan was revised in August 2013. Similar to other plans that are based on the state template, Douglas County describes three goals: infrastructure and connectivity, professional development and growth, and instructional integration. Douglas County situates these goals in the context of a medium sized district. In addition to the previously stated goals, Douglas County emphasizes public awareness of the importance of educational technology, procedures to incorporate educational technology into the curriculum and standards, and methods to evaluate effectiveness and whether or not the objectives are being met.

Some infrastructure milestones that Douglas County reported to have accomplished include: all elementary classrooms have interactive white boards and secondary schools have a mix of interactive white boards and interactive projectors, four sites have completed a high speed network that will accommodate voice over IP (VOIP), servers for internet site filters have been replaced, all campuses have video surveillance, and all campuses have at least 95% wireless coverage. In terms of professional development, Douglas County also indicated that the following milestones have been completed: common core training for elementary and secondary teachers, data use in instruction and planning, and interactive white board training for all teachers. Douglas County also reports leveraging common virtual resources in collaboration with other districts.

Esmeralda County Educational Technology Plan (2013-2016)

Based on its number of pupils (67, http://www.nevadareportcard.com/di/), Esmeralda is the smallest district in Nevada. The updated technology plan for 2013-2016 reflects the local needs and efforts to promote 21st Century learning with students. In addition to the major themes present in the state plan, Esmeralda County's plan outlines specific skills and competencies for students through 8th grade as well as incorporates other local interests (e.g., adult literacy services). Considering the limited resources, Esmeralda has also identified the need to supplement state funding with external grants, citing the fact that "the success or failure of this plan will depend on the amount of grant dollars that we can secure" (ECSD, 2011; p 31). Overall, the district has outlined a judicious use of time, effort, and funding for the goals described. It is not surprising that Esmeralda County lists access and training among its principal goals. While the district is in the process of establishing T1 and T3 lines, the majority of professional training and development plans are best articulated as essential skills (e.g., Microsoft Office, assessment software, Internet Explorer). The county has identified a need to have a team or individual responsible for these trainings within the district.

Lincoln County Educational Technology Plan (2012-2015)

Lincoln County updated their technology plan shortly after the SETNA 2012 report was published. The district used the template from the state in developing their plan and the goals reflect those of the state. In addition, Lincoln County reports that technology has become more prevalent throughout its nine schools. Notably, LCSD indicated that there has been a systematic adoption of a 1 to 1 netbook program, two technology specialists were hired, and upgrades to the network and infrastructure were completed in 2009. As with many small districts, Lincoln County is reliant on grants from the state to accomplish its technology plan.

Mineral County Educational Technology Plan (2012-2015)

The Mineral County Educational Technology Plan addresses the theme of technology integration via the expressed goals associated with student learning for the 21st Century. MCSD's technology plan carefully outlines a technology literacy curriculum through grade 12. In addition, the MCSD plan conveys themes relating to professional development. However, MCSD has expressed concern over their dependence upon situational funds and resources. In the past, the district has received grants in kind and funds to supplement their existing

resources and infrastructure. While the plan includes attempts to secure funding from E-Rate, Title II federal funds, and state grants, each of these sources is temporary. Consistent funding is vital to the Mineral County Educational Technology plan.

Funding Issues Reflected in Plans

Consistent with the previous two versions of the SETNA (2010, 2012), Technology Coordinators cite funding as the biggest challenge in meeting their technology goals as described in the plans. While some districts have incorporated external funding (e.g., local, state, and federal grants), the inconsistencies in these resources pose a serious threat to Nevada's ability to prepare students for the 21st Century, ability to meet specified goals, and long term health overall of education in the state. Ultimately, Coordinators report that while the guidelines set forth by the state and summarily adopted by the majority of districts are useful and valuable, it is difficult to achieve these goals without predictable and adequate funding. With the sole exception of Eureka County, which reports adequate local funding, the following themes emerged from the technology plans and technology coordinators related to funding:

- Funding is both inconsistent and inadequate
- After direct funding from district lines, budget gaps are closed using bonds and grants from state and federal sources
- Using Title I and Title II money when appropriate and possible
- One-time expenditures that serve to supply technology but not service or support it

Many of the coordinators mentioned that their districts have become very creative at stretching the limited funding they have. For instance, one Technology Coordinator mentioned that salvaging parts from older technology and using them to maintain current technology is one way the district has kept computers working for 9-10 years. Others mentioned that teachers, administrators, and technology coordinators donate time to create solutions and workarounds to overcome insufficient technology.

Computer-Based Testing in Nevada

Smarter Balanced Assessment Consortium

Another measure to determine the impact and success of the state and district plans is the move toward computer-based and online testing. Nevada's progress toward online testing is currently being evaluated, and ultimately performed, by the Smarter Balanced Assessment Consortium (SBAC). SBAC is a state-led consortium working to develop next-generation assessments that accurately measure student progress toward college- and career-readiness. Nevada is a governing member of SBAC, which is one of two multistate consortia awarded funding from the U.S. Department of Education in 2010 to develop an assessment system aligned to the Common Core State Standards (CCSS) by the 2014-15 school year. Ultimately, this assessment system will provide a fair and accurate, online testing opportunity for all students. SBAC has provided minimum requirements to engage in statewide online assessment. These requirements refer to the minimum infrastructure (i.e., bandwidth) and device standards (e.g., operating systems, pointing devices, screen size) that reflect a low compliance threshold as well as new purchasing guidelines for districts (http://www.smarterbalanced.org/smarter-balanced-assessments/technology/). As one of the governing states, Nevada is participating in a readiness test and pilot evaluation, which involves a device metric and bandwidth metric.

According to their minimum standards published in November, 2013, SBAC has compiled the following as a guideline for readiness for the 2014-2015 academic year:

Hardware requirements:

- Pentium 233 MHz; 128 MB Ram;
- PowerPC G3 or later; 256 MB Ram;
- 233 MHz; 64 MB Ram;
- iPad 2;
- Certified Android Device;
- Chromebook.

Software requirements:

- Windows XP or later;
- OS 10.4.4 or later;
- Linux Ubuntu 9-10 or Fedora 6;
- iOS 6 or later;
- Android 4.0 or later;
- Chrome OS.

Other requirements:

- 10” or larger screen with 1024 x 768 display
- Headphone availability
- Administrative tools and access
- Appropriate keyboards
- Interactive device (e.g., mouse, touch screen, tablet pen)
- Internet connection equal to or exceeding 20 Kbps (Kilobits per second)

SBAC Device Metric

One method used to determine whether or not schools are ready for online testing is to evaluate the nature of devices and students’ access to them. Data from an SBAC readiness pilots indicate that there may be concern over Nevada’s readiness for online testing and content delivery using the device metric. Although there is some increase in teacher access and ability to secure technology within schools, there have not been significant gains in student access or improvement of device to student ratios when compared to SETNA 2012.

Results from the SBAC device readiness survey indicate that 145 of 571 schools in Nevada have a ratio lower than 4:1 students per SBAC ready device. While there are no data for some schools, data indicate that ten schools have no SBAC compliant devices at all.

SBAC Bandwidth Metric

In addition, SBAC readiness involves per pupil bandwidth for test taking purposes. On average, SBAC uses 20Kbps (Kilobits per second) per student as a minimum standard for online testing. As a component to the SBAC testing and digital readiness, the state also conducted a network infrastructure and speed test conducted by Education SuperHighway, a non-profit organization with the mission of ensuring that every K-12 school in America has reliable, high-capacity Internet access. Education SuperHighway conducts evaluations of network speeds within the context of digital learning and testing environments. Recent data compiled in 2013 revealed that the majority of Nevada schools meet the minimum standards for SBAC readiness in terms of bandwidth alone.

According to the study, only 17% of schools in Nevada were found to have per pupil bandwidth below 20 Kbps. Unfortunately, these bottlenecks often occur in larger schools that

are home to 32% of Nevada's students, or roughly 142,522 pupils who are not ready to engage in online testing. By contrast, 39% of schools have been deemed as media-rich and assessment ready. By contrast to the previous example, these schools are home to only 93,530 students.

Although the number of students who are not ready to engage in online testing is alarming, the fact that the majority of these students come from large schools allows the districts and state to prioritize resources for these areas. In doing so, it is possible to eliminate bottlenecks and facilitate every student's access to fair and balanced assessments via SBAC. For example, some rural areas have recently received upgrades to their network infrastructures. Although the capacity does not adequately support heavy concurrent load, the overall speeds far exceed those of the major urban centers. Although 20-50 Kbps per pupil is deemed adequate, Figure 2 highlights the trend that smaller schools may have greater proportions of students with per pupil speeds in excess of 100 Kbps. However, this speed comes at the potential cost of increased congestion.

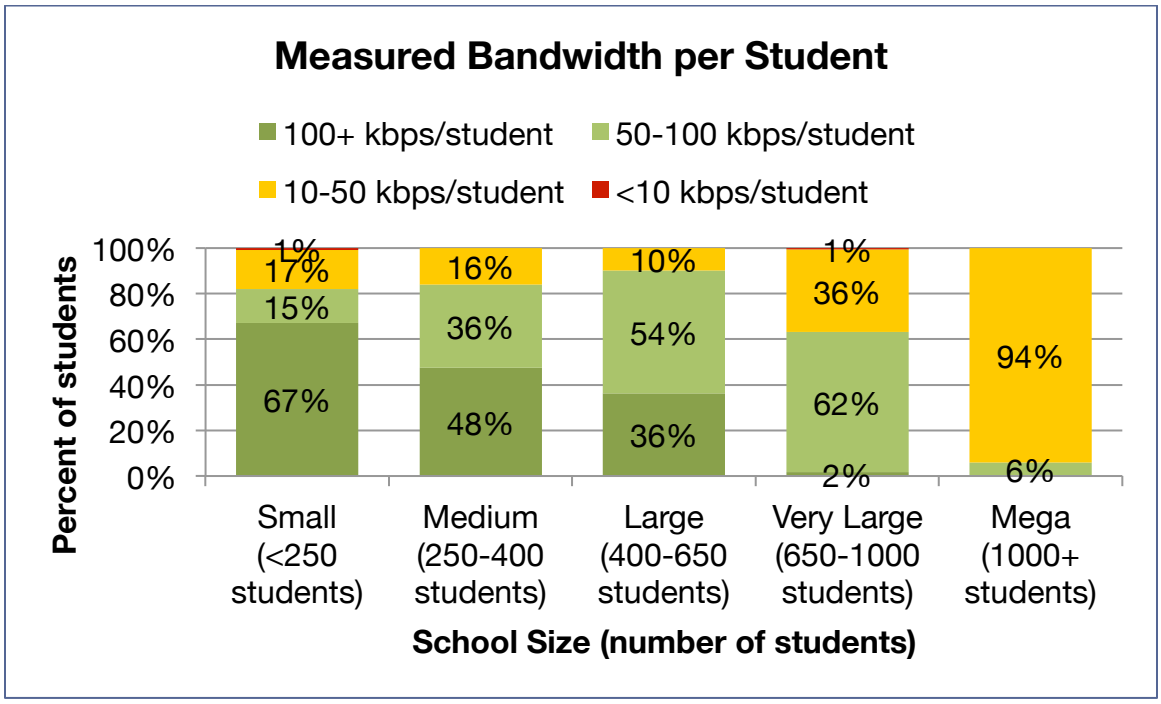


Figure 2: Concentration of Bandwidth per Student Across School Sizes
Note: Figure courtesy of Education SuperHighway "Nevada SchoolSpeedTest Month."

SBAC Combined Metrics

Although the SBAC assessments are untimed, it is important to remember testing is based on the assumption that students will complete two separate two-hour sessions for ELA, and two separate two-hour sessions for Mathematics. Given this approximate timeframe, the longer it takes for a student to download and interact with content, the longer they require per testing session. It follows that schools with lower average per pupil bandwidth will take longer to complete the average test given the amount of data that will need to be downloaded and streamed. Schools are typically deemed unready if they lack SBAC ready devices (i.e., student to device ratio lower than 4:1) AND have low per pupil bandwidth (i.e., < 20 Kbps per pupil).

When combined, the data above indicate that there are relatively few schools that fail to meet both standards. Although SBAC field test is scheduled for completion on June 6, 2014, preliminary data indicate that the majority of Nevada is ready to meet the SBAC minimum requirements. Fifteen schools (see Table 4) do not currently meet both standards.

Table 4: Schools Unprepared for Online Testing

School Name	District Name	ESH Locale	Kbps per pupil	Enrollment	SBAC Devices	Ratio
Sig Rogich Middle School	Clark County	Major City	18.89	1833	349	19.04%
Ruby Valley Elementary School	Elko County	Remote Rural	1.82	18	0	0.00%
West Wendover Elementary School	Elko County	Remote Town	9.65	605	30	4.96%
East Valley Elementary	Lyon County	Suburban	5.72	431	22	5.10%
Silverland Middle School	Lyon County	Suburban	12.11	529	43	8.13%
Coral Academy Of Science Las Vegas	State-Sponsored Charter Schools	Urban	19.52	1379	170	12.33%
Nevada Connections Academy	State-Sponsored Charter Schools	Suburban	19.84	1987	43	2.16%
Nevada Virtual Academy	State-Sponsored Charter Schools	Urban	5.21	3669	279	7.60%
Alice L Smith Elementary School	Washoe County	Urban	2.67	746	60	8.04%
Brown Elementary School	Washoe County	Urban	19.53	864	32	3.70%
Hidden Valley Elementary School	Washoe County	Suburban	7.00	492	30	6.10%
Lois Allen Elementary School	Washoe County	Urban	19.61	639	0	0.00%
Mariposa Academy Charter School	Washoe County	Urban	13.86	163	27	16.56%
Sarah Winnemucca Elementary School	Washoe County	Urban	14.58	610	48	7.87%
Lund Elementary School	White Pine County	Remote Rural	4.31	57	12	21.05%

Note: Total of 14,022 students unprepared for minimum online testing requirements.

Impact of Plans

In the vast majority of districts, the state plan served as a guide for technology planning. However, in the most extreme cases (i.e., smallest and largest districts), the technology plans reflect the unique needs of those districts. Although there is some variation, all plans address the three core principles: 1) infrastructure and connectivity, 2) professional development and growth, and 3) instructional technology integration. These district plans drive the goals, standards for practice and purchasing, as well as frame decisions that are not necessarily outlined in the plans. One of the current goals in the state is toward an improved infrastructure to accommodate online testing, the data from which can be leveraged to improve decision making in each district. Though the district plans inform school sites, each site and district must address its unique circumstances and priorities, taking into account funding and changes in educational technology issues.

Overall Progress

Although there remains considerable demand and need with respect to instructional technology, progress is being made as a result of the Technology Plans and district initiatives to improve infrastructure. This is most evident when one considers the SBAC readiness as a litmus test against which Nevada measures its infrastructure and capacity. However, it is important to note that this inference uses the minimum standards described by SBAC. These standards are punctate and momentary. As tools evolve, so do the standards. Although the majority of districts have achieved minimums, they often do so with the help of external funds. One Technology Coordinator reported that nearly 70% of their technology budget came from grants. Therefore, it is plausible that schools that meet current standards will fail to do so in the very near future if the funding sources, other than the state, dry up and stable, consistent funding is not identified as a replacement.

Section 4: At a Glance

Demographics:
- Predominantly female (75%)
- District participation representative of overall population
- 3,500+ completed teacher surveys
- Competent with technology

Devices in classrooms:
- Increased saturation with teachers and students
- Vastly different and inconsistencies in device age
- Computers per pupil increasing, 1:1 or greater in some districts
- Mobile devices increasing

Other technologies:
- Trends indicated tools are used to present material
- Students do not interact with technology

Internet:
- Access rated adequate but inconsistent in most cases
- Filter an ongoing issue, with mixed reviews

Section 4: Current Capacity of Nevada's Schools

The sources of data in this section include the responses from the Technology Coordinator and Teacher surveys, the Nevada Superhighway study, and the Nevada Educational Technology Survey (NETS).

This section addresses the guiding question:

3) What is the current capacity of schools in Nevada to influence the achievement of students with educational technologies?

Survey Results

Survey requests were sent to Technology Coordinators and administrators in all 17 districts. Data were available from only nine of the 17 districts. However, responses were appropriate to each district category.

As indicated earlier, responses were consistent with previous SETNA reports. Although not every district was accounted for, data were present from each district size category. As a result, most analyses are made in terms of district size in order to maintain statistical power. Table 5 lists the response rates and frequencies from the districts.

Table 5: Responses Frequencies from Each District (Teacher Surveys)

District	District Size	Teachers	Frequencies (%)
Carson City	Medium	150	4.12
Churchill County	Medium	79	2.17
Clark County	Large	2401	65.87
Douglas County	Medium	45	1.23
Humboldt County	Medium	9	0.25
Lincoln County	Small	7	0.19
Lyon County	Medium	152	4.17
Washoe County	Large	733	20.11
White Pine County	Small	1	0.03
District Unidentified	--	68	1.87
Total		3645	100.00

Note: Figures are rounded to two decimal places.

Demographics

Overall, the majority of participants also indicated that they were female (75%), with the remaining 22% male and 3% electing not to answer. Participants indicated that they were predominantly veteran teachers, with 66% indicating that they had 10 or more years of experience. By contrast, a total of 12% indicated that they had five or fewer years of experience (see Figure 3). With respect to their first year teaching, there is a gradual distribution of experience (see Figure 4). When asked about the time teachers have spent in their current schools, responses were more varied with a more equal distribution of years (see Figure 5).

Additionally, SETNA 2014 asked teachers to indicate the type of school in which they worked. These levels were “Elementary school (K-5 or K-6)”, “Middle school (6-8, 6-9, 7-8, or 7-9)”, “High school (9-12 or 10- 12)”, “Elementary/Middle school (K-8)”, and “Other (please specify)”. The “other” category included responses from teachers in special education departments, correctional facilities, other grade combinations (1-6, 5-6, 7-12, K-4, K-12, etc.), early childhood, and many more placements that are not common. The majority of participants indicated that they taught in an Elementary school (49%), while approximately 20% and 26% indicated they taught in Middle and High Schools, respectively (see Figure 6). These results coincide with the proportion of teachers in Elementary, Middle, and High schools throughout the state.

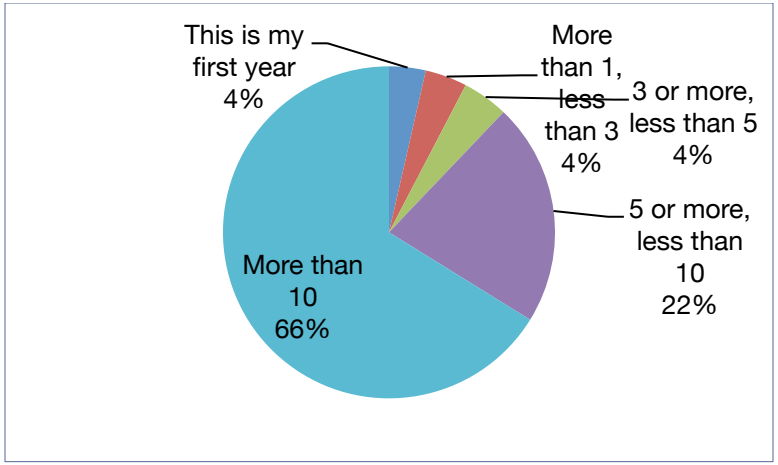


Figure 3: Total Number of Years Teaching

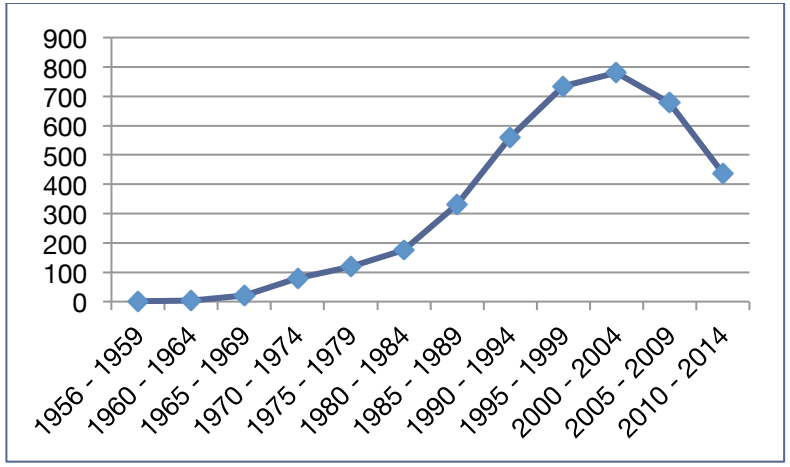


Figure 4: First Year Teaching

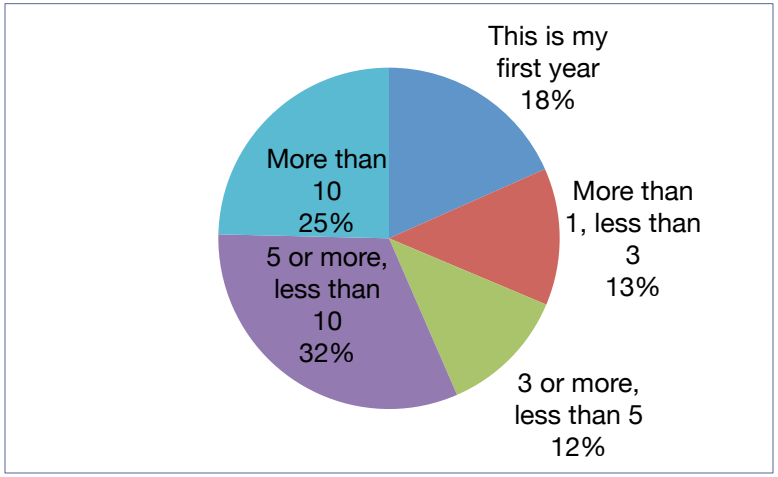


Figure 5: Number of Years Teaching in Current School

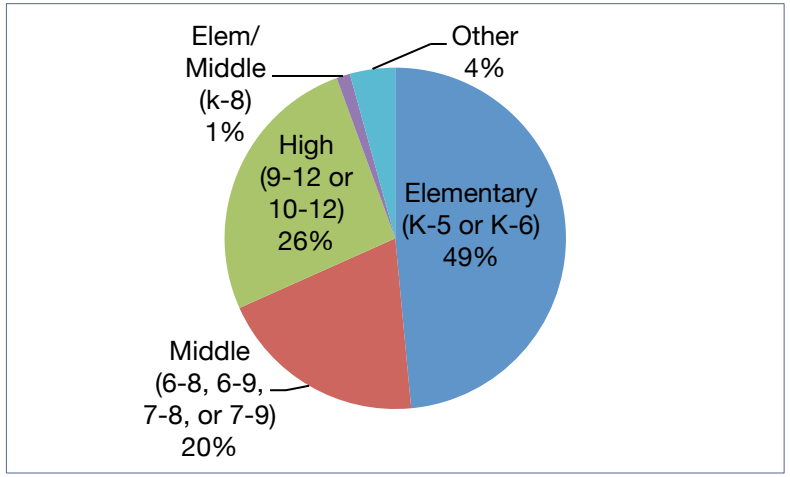


Figure 6: Types of School

Note: "Other" indicates schools such as Pre-K, special education, or K-12.

Technology Experience

A new question about participants' experience with technology was included this year. To facilitate teachers' ability to accurately and consistently respond to this item, stems were enhanced to include typical activities associated with the experience level. Figure 5 highlights what teachers would see when responding to this item.

Most of the participants indicated that they considered themselves *about average* or *experienced* when they were asked about their experience with technology (39% and 43% respectively). Few respondents indicated that they considered themselves *very experienced* or technology leaders (15%). Figure 8 provides a summary of teachers' responses. When interpreting the results, it is important to consider that the majority of teachers have average or above average experience with technology.

These sample characteristics may influence the manner in which teachers respond to certain items, particularly items that rely on their personal accounts or perceptions associated with educational technology. In particular, SETNA 2014 asked teachers about their perceptions of professional development and preparation for teaching with technology. These responses must take into account the characteristics of the sample when drawing inferences from the data. Analyses based on experience with technology, years teaching, and years teaching in a particular school may each influence the use of technology. However, analyses at this depth are beyond the scope of this assessment. Further, data that that are presented, pertain to counts, use, and availability of technology and are not directly influenced by perception.

Please rate your experience with technology:

- ○ Very inexperienced (I do not consider myself a technology user. I get someone else to do technology-based tasks for me).
- ○ Inexperienced (I consider myself a novice user. I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job).
- ○ About average (I have enough skills to complete the management and communication tasks expected of me and occasionally will choose to use technology to accomplish something I choose).
- ○ Experienced (My skills are very good. I use a variety of technology tools and I use them efficiently for all aspects of my job).
- ○ Very experienced (I am a technology leader. I use technology efficiently, effectively and in creative ways to accomplish my job. I often teach others to use technology resources).

Figure 7: Teachers' Experience with Technology

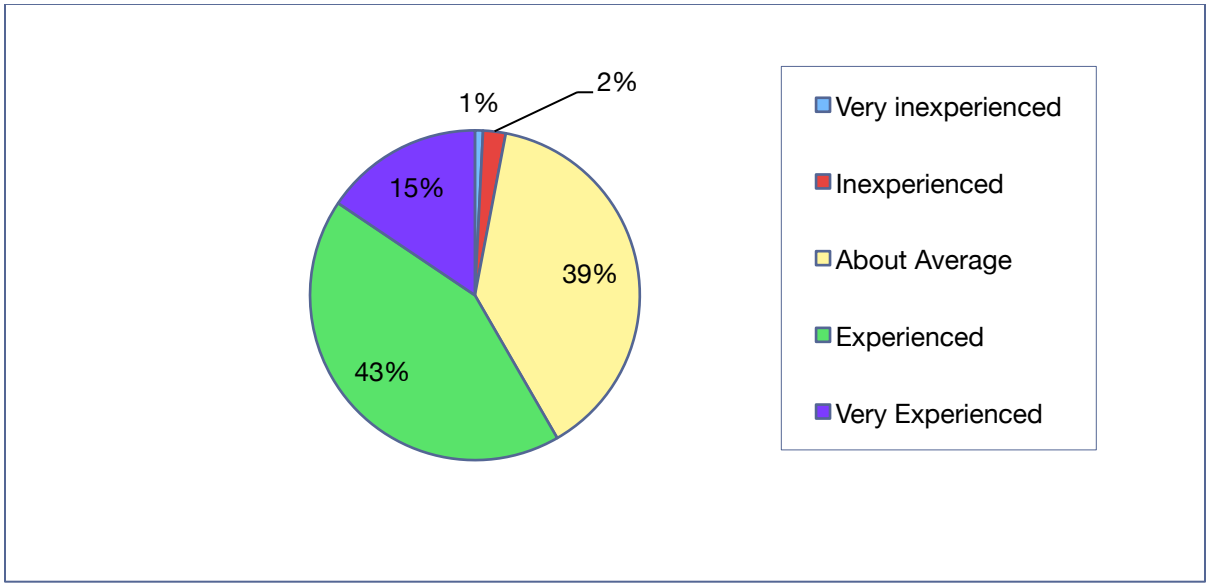


Figure 8: Teacher Experience with Technology

Devices in Classrooms

Teacher Operated Administrative Device

When surveyed, IT Coordinators indicated that although resources were typically insufficient, most schools' technology is within the five-year purchasing cycle. Confirming this, teachers report that 99% of classrooms have a device for administrative tasks (e.g., grading, attendance). On average, this device is fewer than five years old. A total of 93% of teachers *agree* or *strongly agree* that the device is easy to use (see Figure 9).

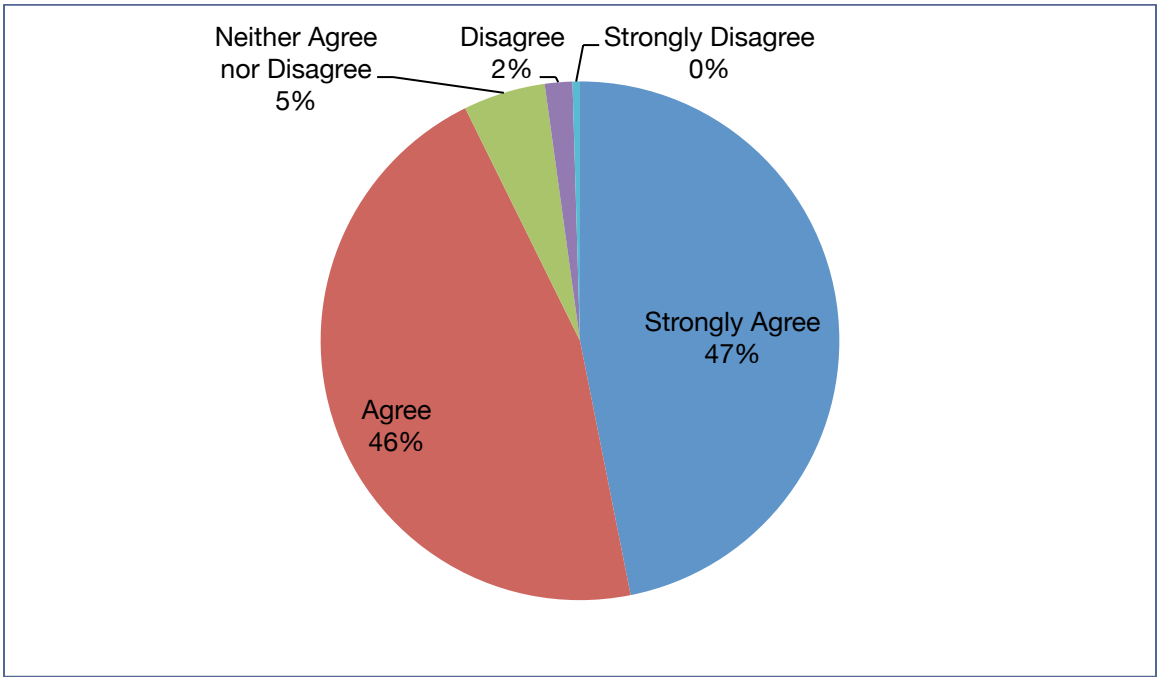


Figure 9: Device for administrative tasks is easy to use

Teacher Operated Instructional Computer

In terms of instruction, 95% of teachers report that they have a device in the classroom that is expressly used for teacher-based curricular activities (e.g., planning, presenting). Coinciding with purchasing guidelines illustrated in the technology plans, districts report that devices are five years old or newer, on average. A total of 70% of teachers *agree* or *strongly agree* that the device is easy to use (see Figure 10).

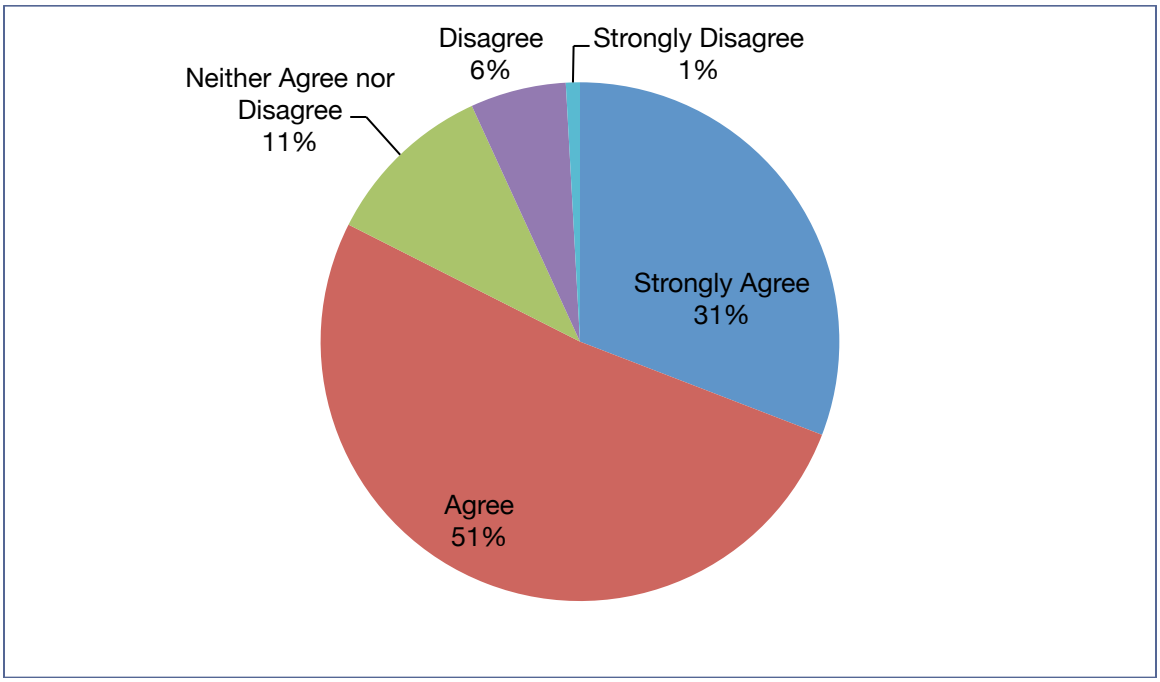


Figure 10: Teacher Operated Device Ease of Use

Student Operated Devices

For SETNA 2014, teachers were also asked to indicate whether or not they had regular access (i.e., in the classroom) to a computer for student use. The majority of teachers indicated that they had access (94%) and that 70% either agreed or strongly agreed that they were easy to use (see Figure 11). This represents a 19% increase from SETNA 2012, which reported only that 75% of classrooms had a at least one computer for student instructional purposes. In turn, the 2012 results reflected a 13% increase from the previous study. Clearly, there is an increase in saturation of educational technology for student use.

To further examine the number of devices for student use, specifically those that are able to connect to the Internet in some way, the research team leveraged the NETS data. Once the data were reorganized, recoded, and analyzed, it was apparent that three districts report a ratio of students per computer in excess of 1:1 (i.e., Esmeralda, Eureka, and Storey Counties; see Figure 12). Elko, Humboldt, Lincoln, Lyon, Mineral, Pershing, and White Pine counties each have ratios of at most two students per computer (i.e., 2:1). By contrast, the state supported charter schools and Lander County schools report a lower ratio of students per computer (5:1 and 25:1, respectively).

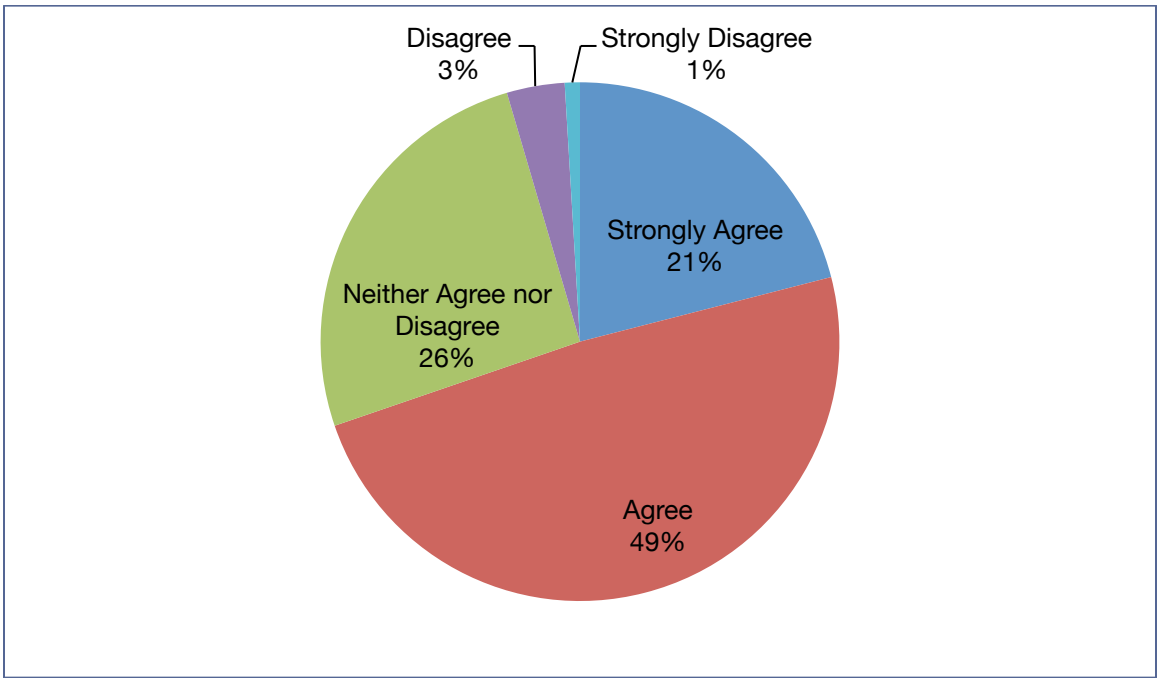


Figure 11: Student Operated Device Ease of Use

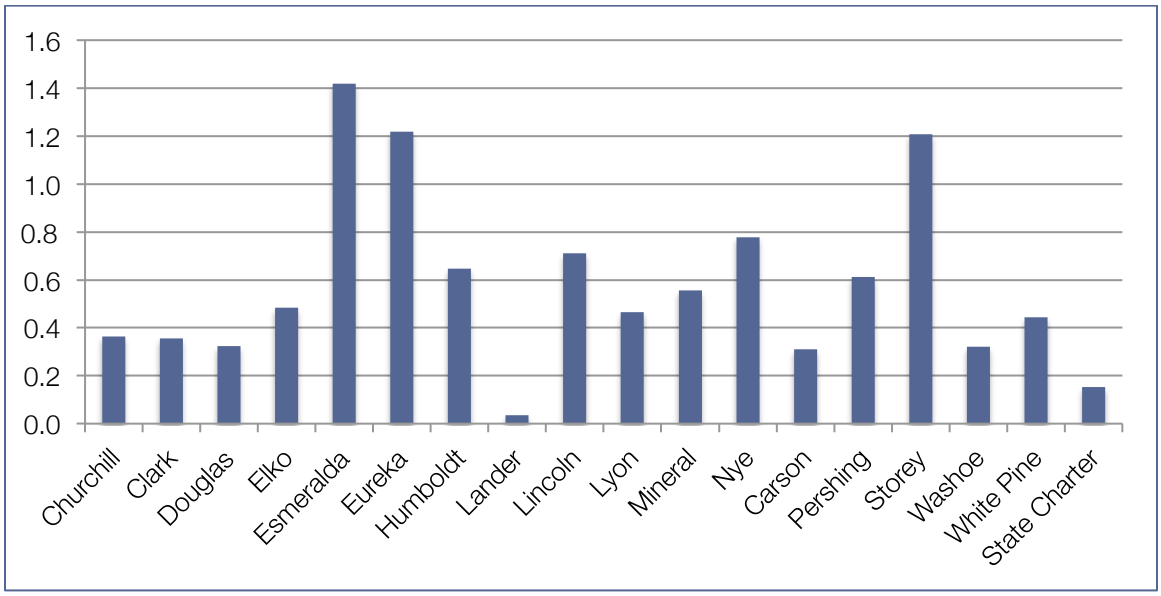


Figure 12: Average number of connected computers per pupil

Although both sets of data indicate that there is increased student access to technology, there is also great variation in the age of connected devices across districts as demonstrated in Figure 13. For example, Eureka County does not report having any devices that are newer than five years of age. By contrast, every device in Lander County was purchased within the last five

years. Clark County reports a total of 354 devices that are older than five years in classrooms throughout the district. Because of the number of schools in Clark, this number of devices reflects an average ratio of seven older computers for every two classrooms (7:2). Said another way, one could expect to see between three to four old computers sitting in an average Clark County Classroom. By contrast, you would be lucky to find one device this old in a Mineral County Classroom. Rather, you would expect to see an average of four to five newer computers distributed throughout that district.

This level of inconsistency can become a significant challenge for planning and implementation of educational initiatives at the state level.

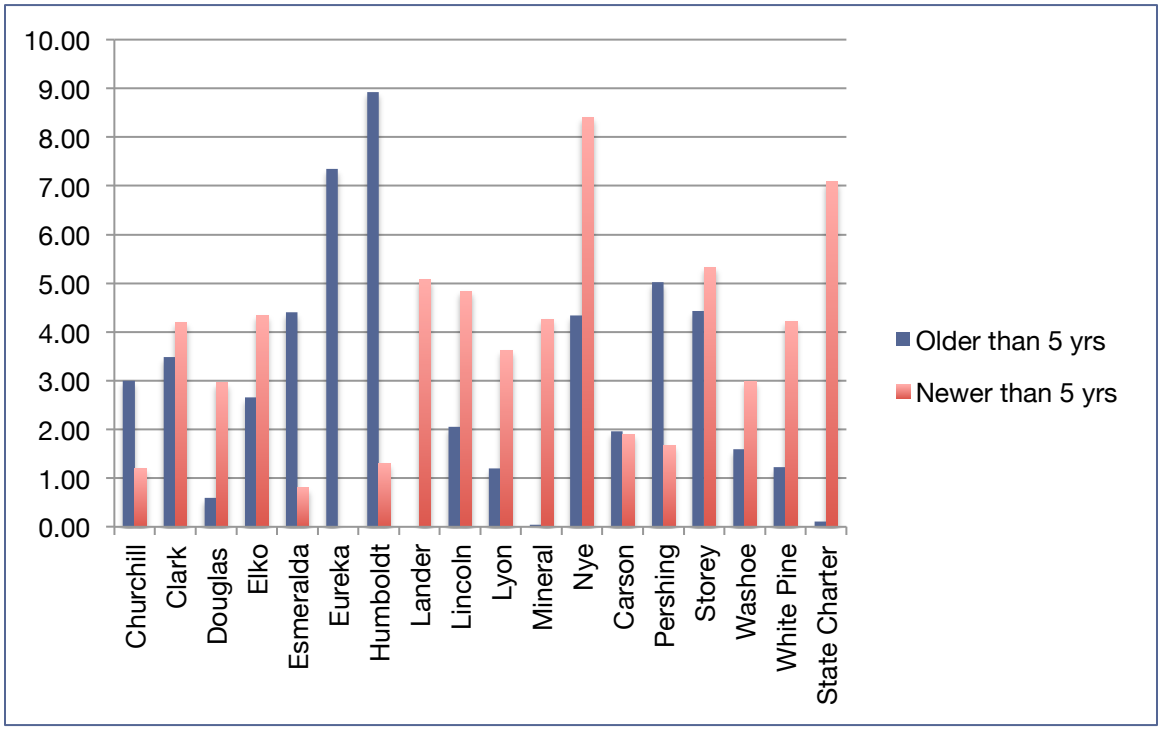


Figure 13: Average number of connected computers per classroom that are Older or Newer than 5 years.

In addition to computers, the NETS explored the growing trend of mobile and handheld devices for use by students. Specifically, a mobile device is defined to be any device used by students for instructional purposes. These may include iPods, iPads, netbooks, Androids, smart phones, or any other mobile device that access the Internet.

In this area, rural and areas are making the greatest strides. Specifically, Esmeralda currently has the highest ratio of students per device (5:7). Similarly, four other districts have nearly one mobile device for every two students (i.e., 5:2). It is reasonable to consider mobile devices and

cellular connectivity as a solution to an otherwise difficult funding situation. Figures 14, 15, and 16 highlight the average number of mobile devices for each school, classroom, and student across districts.

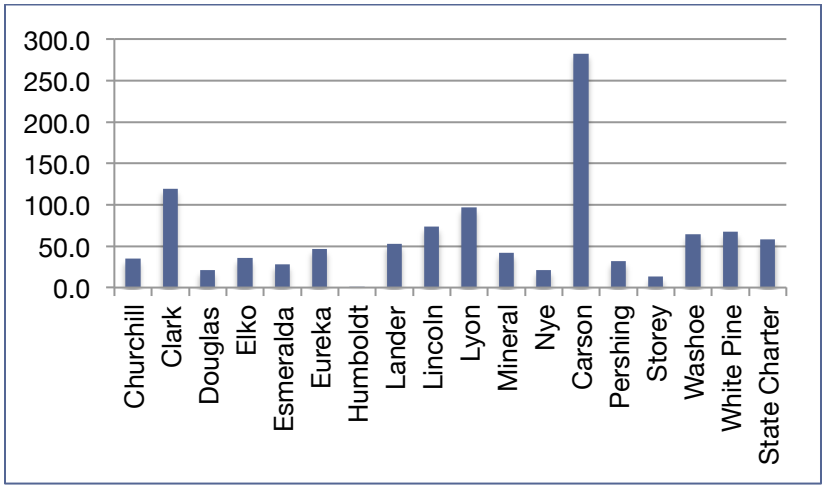


Figure14: Average number of mobile devices per *school*

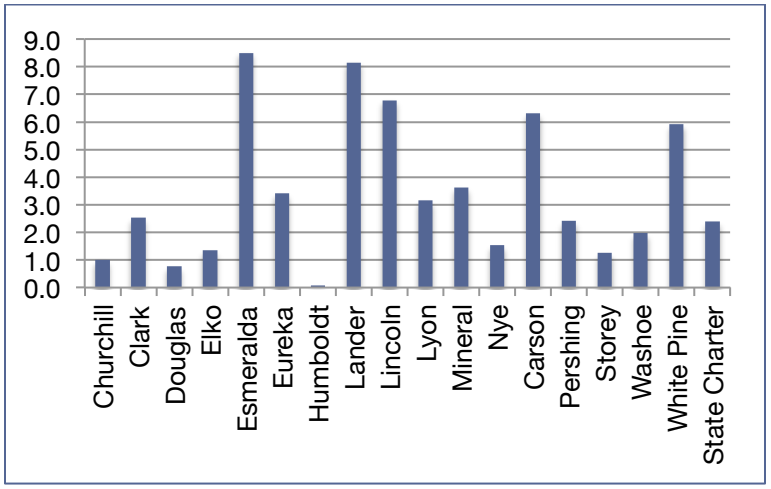


Figure 15: Average number of mobile devices per *classroom*

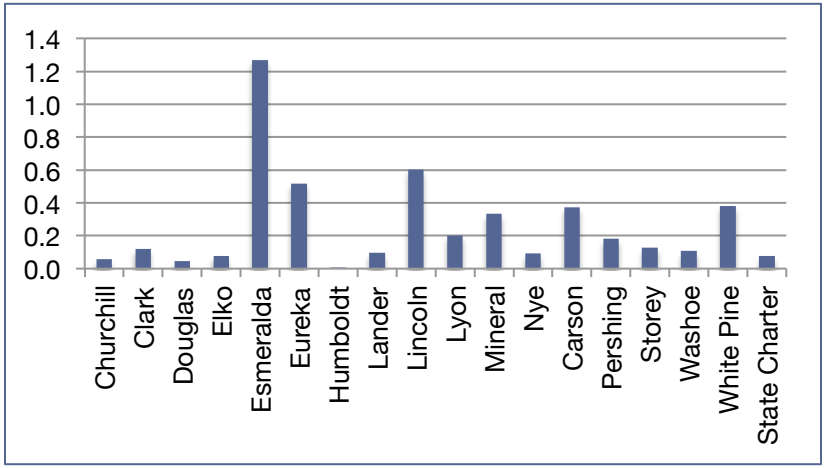


Figure 16: Average number mobile devices per *student*

Although the trends in digital mobile devices are encouraging and some districts have purchased iPads, Chromebooks, and other mobile tools, the logistics of

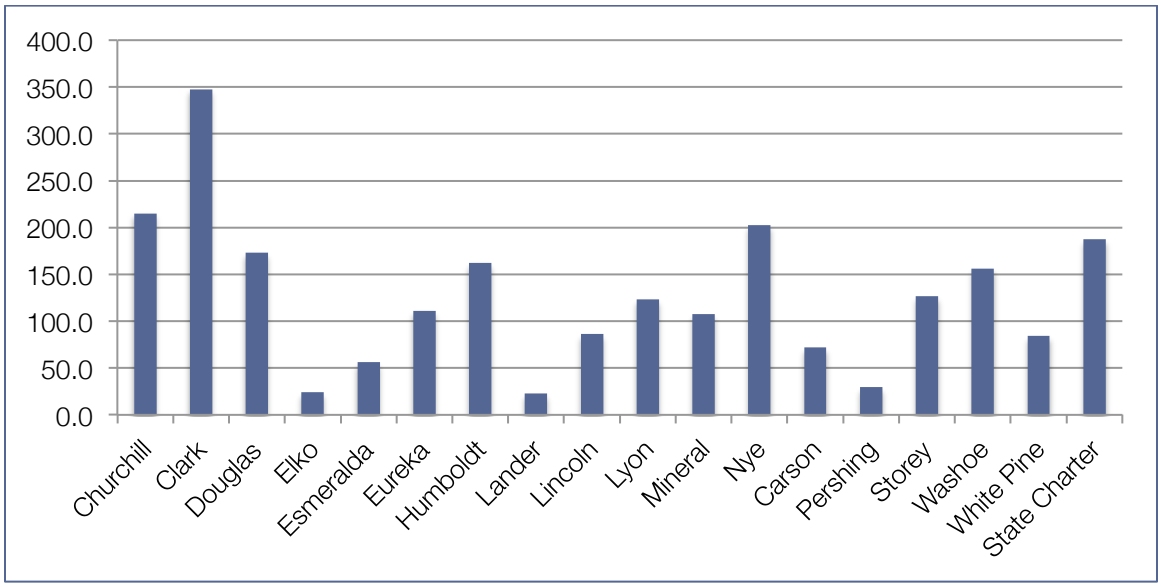


Figure 17: Average number of SBAC compatible devices per school

Teacher Use of Other Technologies

The SETNA 2014 also examined a variety of different educational technologies and the frequency teachers use those tools. In addition, the teachers were asked how often they use those tools with students. The results tell an interesting story about what is happening in Nevada's schools. By far, the most commonly used type of tools falls into the presentation category. Specifically, teachers use Document Cameras, Interactive whiteboards, LCD projectors, Presentation Software, and streaming video. A consistent theme of "showing" students is present in each of these tools. By contrast, tools that require interaction are used far less frequently (e.g., database software, spreadsheets, simulations, graphic organizers). A second type of tool that is regularly used could best be described as a "legacy" tool. A legacy tool is one that has been in classrooms for several years, is highly common, and is still useful. However, a legacy tool is approaching the point that it is mundane technology and assumed that most, if not all, teachers have the skills to integrate these tools. They include word processing, email, and the Internet. The figures for each device, broken out by district, are listed in Appendix E.

Student Use of Other Technologies

With respect to student use of the tools listed above, reports confirm that teachers use the technology to project or show information to students. Specifically, very few students interact with tools, regardless of their documented impact. For example, Simulations are a useful technology for developing sophisticated understanding of phenomena. Simulations are useful in a variety of disciplines (Jonassen, 2000; 2005). However, most students, regardless of district size, are using interactive tools *infrequently* or *never*. Like teachers, students do engage with several "legacy" tools (e.g., word processing and the Internet). The figures for each device, broken out by district, are listed in Appendix F.

Internet Access

The SETNA 2014 also surveyed teachers with respect to the Internet connection of the devices they use with students. Although some teachers were not aware of the type of Internet connection (e.g., wired, wireless, 3G), most devices are connected to the Internet. In terms of reliability, teachers do not completely agree. In terms of the wired connections, there is general agreement that the connection is dependable (66% *agree* or *strongly agree*). However, the number of teachers that feel that same way about the wireless connection differs significantly. Only 39% of teachers indicated agreement (*agree* or *strongly agree*) when asked if the wireless connection was dependable. More importantly, 25% *disagree* or *strongly disagree* and a total of 36% of teachers were undecided. Given the usage of Internet resources (93%) and other Internet dependent technologies, a consistent and dependable connection is absolutely necessary for successful teaching.

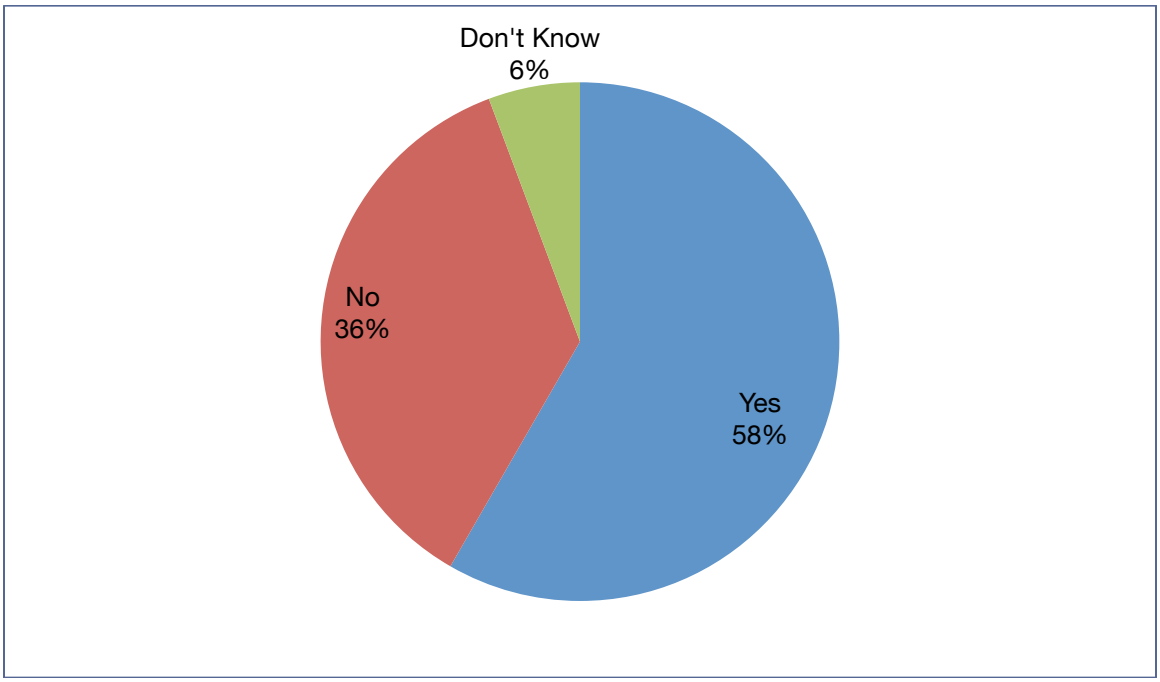


Figure 18: Devices have Wired Connection to Internet

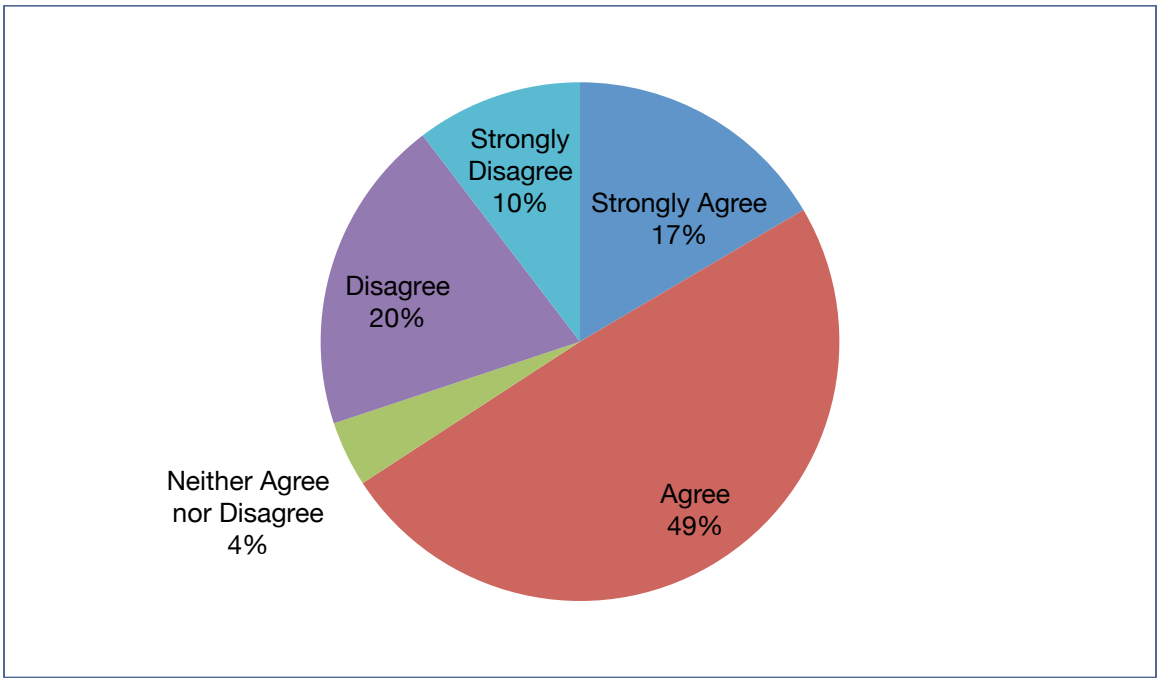


Figure 19: Dependable Wired Connection

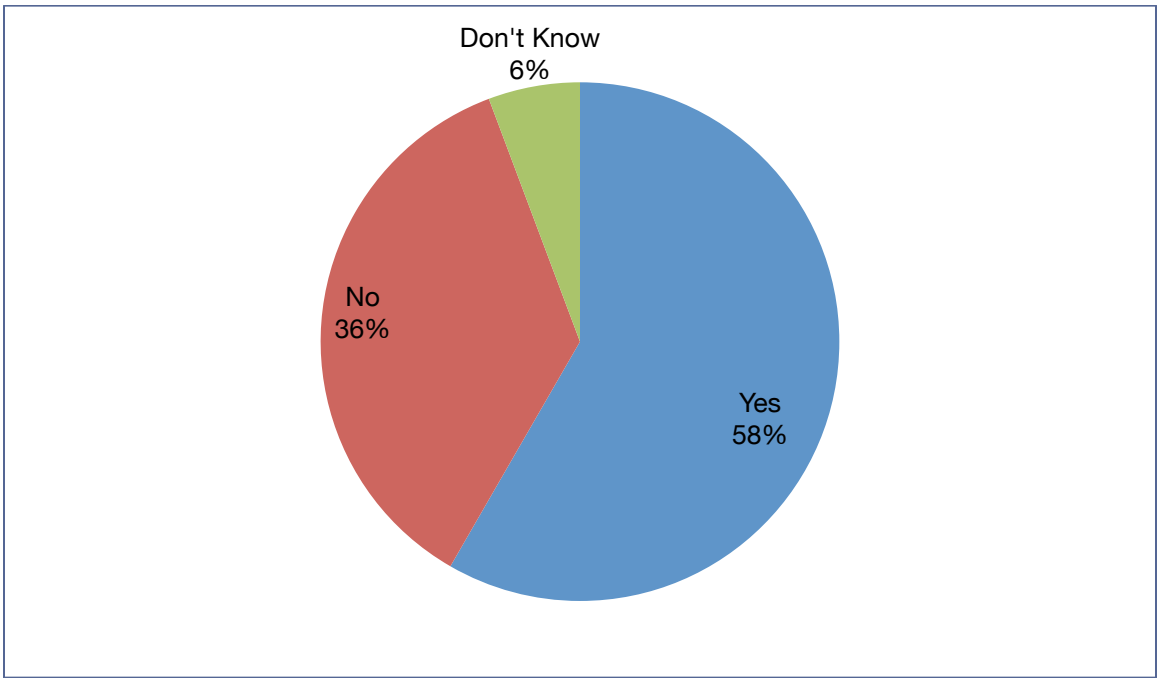


Figure 20: Devices Have Wireless Connection

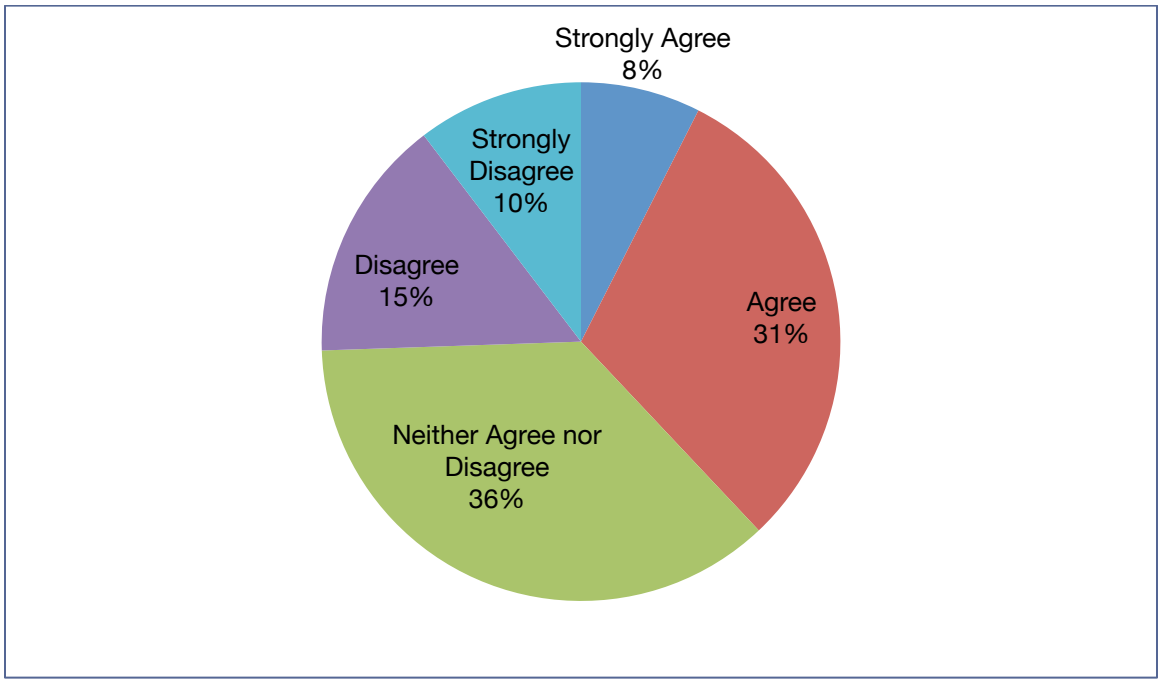


Figure 21: Dependable Wireless Connection

Internet Filter

All Nevada school districts have policies and practices in place to vet websites for student and staff use. Internet filtering is a constant struggle for administrators and teachers. Administrators must contend with student safety and the Family Education Rights and Privacy Act (FERPA). From a classroom perspective, a teacher may submit a site to be vetted one week, while another teacher in the same district may submit the site as being inappropriate the following week. When filtering is executed at the district level with anything but a unilateral approach, as is the case with Washoe's Ironport web filter, the vetting and review process can lead to unpredictability when using websites to facilitate curricular objectives.

For teachers, it is clear that Internet filtering is currently an issue and will remain an issue in the near future. This is demonstrated by the relative disagreement about the policies. Slightly more than half of teachers (56%) consider their school's Internet filter to be too restrictive, while only 41% perceive it to be about right. Very few (3%) suggest that additional restrictions are necessary. More importantly, those who are opposed have claimed that the filter leads to a wide range of issues, from an inability to present current science video content to being unable to access the district sponsored professional development materials.

Section 5: Technology Integration for Student Achievement and Proficiency

The sources of data in this section include the results from the Teacher Survey.

This section addresses the guiding question:

4) How prepared are Nevada teachers to integrate technology into their classrooms?

Section 5: At a Glance

Tools prepared to use:
- Word
- Internet resources
- Mobile devices

Tools that need more training:
- Online environments
- Content management systems
- Mobile devices in classroom settings

Unprepared in key areas:
- Teaching with e-books
- Online and hybrid learning

Professional Development:
- Generally unfavorable

Survey Results

In SETNA 2014, teachers were asked a variety of questions about their readiness to engage in a 21st Century teaching ecology. For SETNA 2014, we examine this ecology in terms of teacher preparation to use specific tools and software as well as engage in contemporary practices of teaching. In terms of tools, SETNA 2014 has expanded to include numerous additional tools beyond previous evaluations. Although some may be considered legacy tools (e.g., document camera), Table 6 lists the different technologies reviewed by SETNA 2014. These tools reflect growing trends in educational technology.

Further, SETNA 2014 incorporated specific examples of 21st Century teaching practices, such as the use of data to make instructional decisions, the ability to leverage content management systems to hybridize instruction, and teaching material that has been delivered solely from a digital device. Table 6 highlights the added themes in SETNA 2014. In addition to tools and practice, this section includes aspects of teachers' professional development with respect to educational technology.

Table 6: Technologies and Practices Reviewed in SETNA 2014

Technologies		
• Audio or video podcasts (access or create) • Audio/Video production/editing (Audacity, GarageBand, iMovie, MovieMaker, etc.) • Classroom response systems (clickers, etc.) • Classroom voice amplification systems • Content management systems/websites (Moodle, Canvas, Blackboard, etc.) • Content specific applications (math, science, music, etc.) • Database software	• Digital camera • Digital video camera • Document camera • Drill and practiceE-mail (student) • Handheld or mobile device • Image/photo editing • Integrated learning systems (CompassLearningOdessy, Plato Learning, etc.) • Interactive whiteboard software (Promethean, SMART Notebook, etc.) • Internet resources • LCD projector • Library catalogs	• Online research databases available through the school media center/library • Presentation software • Probes and/or probeware • Scanner • Simulations • Spreadsheets • Tutorials • Videoconferencing • Video streaming (Discovery, Learn 360, TeacherTube, etc.) • Word Processing Software
Practices		
• Teach in a classroom where every student has their own device. • Access and use state assessment data (e.g. CRT scores) to support instructional decisions. • Access and use district assessment data to support instructional decisions. • Teach in a classroom where all of the instructional materials are delivered via the device. • Find effective instructional materials on the Internet. • Blended learning, hybrid 1:1, BYOD, Project Based Learning (PBL). • Integrate educational technology into your classroom. Incorporate library databases into student research projects.		

Tools

Although Section 4: Current Capacity of Nevada's Schools details the available resources and infrastructure in classrooms, the items were also phrased in such a way that indicated the degree to which teachers regularly integrated technologies into their teaching. From these previously described results, it seemed evident that there may be areas in which teachers focus more of their energy. For example, 93.5% of teachers indicate they are at least *prepared* to utilize Internet resources in their teaching. Similarly, 94.1% of teachers report that they are at least *prepared* to use word processing software in their teaching. Table 7 summarizes teachers' responses to the prompt: "please indicate the degree to which you are currently prepared to use the following tools for instructional purposes." Optional responses included: n/a, not at all prepared, not prepared, prepared, well prepared, and very well prepared.

In addition to these commonly available tools (e.g., Internet resources, LCD projectors, Presentation software), the data also indicate that teachers are prepared to use and capable of using contemporary technologies for instructional purposes.

For example, 70.6% of teachers indicate that they are at least *prepared* to use mobile devices in the classroom. However, comparatively few teachers (48.4%) feel prepared to teach with content management systems/websites (Moodle, Canvas, Blackboard, etc.). This preparation has implications for training and purchasing, much of which is already present in the Technology Plans.

Table 7: Teachers' Technology Preparation

Technologies	At least *prepared*	*Very well prepared*
1) Audio or video podcasts (access or create)	55.6%	9.3%
2) Audio/Video production/editing (Audacity, GarageBand, iMovie, MovieMaker, etc.)	37.5%	6.7%
3) Classroom response systems (clickers, etc.)	48.4%	8.8%
4) Classroom voice amplification systems	71.0%	26.9%
5) Content management systems/websites (Moodle, Canvas, Blackboard, etc.)	48.5%	8.8%
6) Content specific applications (math, science, music, etc.)	71.9%	13.0%
7) Database software	64.0%	9.0%
8) Digital camera	73.0%	24.5%
9) Digital video camera	65.1%	19.8%
10) Document camera	62.4%	21.0%
11) Drill and practice	62.4%	14.7%
12) E-mail (student)	70.5%	25.4%
13) Handheld or mobile device	70.6%	22.1%
14) Image/photo editing	55.9%	12.9%
15) Integrated learning systems (CompassLearningOdessy, Plato Learning, etc.)	37.8%	6.6%
16) Interactive whiteboard software (Promethean, SMART Notebook, etc.)	68.9%	15.9%
17) Internet resources	93.5%	30.2%
18) LCD projector	84.2%	30.6%
19) Library catalogs	67.2%	14.3%
20) Online research databases available through the school media center/library	70.6%	15.3%
21) Presentation software	76.3%	19.3%
22) Probes and/or probeware	22.6%	3.6%
23) Scanner	61.7%	15.1%
24) Simulations	32.1%	5.8%
25) Spreadsheets	65.9%	14.1%
26) Tutorials	68.1%	12.9%
27) Videoconferencing	43.3%	7.5%
28) Video streaming (Discovery, Learn 360, TeacherTube, etc.)	70.5%	19.8%
29) Visualization/graphic organizers (Inspiration, etc.)	58.5%	11.2%
30) Web portals	46.0%	8.6%
31) Word processing	94.1%	45.0%

Overall, teachers appear prepared to use tools that have been in classrooms for several years, but are otherwise unprepared to make use of emerging technologies, many of which are

currently available in schools throughout the state. This is important It is important to implications for issues of computer-based testing and the long-term goal of instructional effectiveness. Although reports indicate that progress is ongoing, these issues must be addressed prior to securing Nevada's future.

Practices

In addition to the tools that teachers are prepared to use in their classrooms, SETNA 2014 also examined several 21st Century teaching practices. Teachers in modern classrooms require new skills, strategies, and pedagogies if they are to succeed. Practices described here were identified by the focus group (see Section 2) because of their relevance in upcoming initiatives. These data indicate that while teachers report readiness with respect to some tools, the practices associated with teaching in those contexts are something different. For example, teachers reported that they are ready to use mobile technologies (70.6% *agreed* or better). However, if the mobile technologies are in the hands of the students and each student has a device, then ratings of their preparation drop to 54.9%. Also a concern when considering the potential for e-books, teachers are generally unprepared to teach in classrooms that deliver materials via devices (47.5%). In terms of readiness for teaching in blended environments, teachers are similarly unprepared (44.4%). These results remain relatively unchanged when compared to SETNA 2012. Table 8 summarizes teachers' responses to the prompt: "Please indicate the degree to which you are currently prepared to accomplish the following." Optional responses included: n/a, not at all prepared, not prepared, prepared, well prepared, and very well prepared.

Table 8: Teachers' Preparation for 21st Century Practices

Practices	At least *prepared*	*Very well prepared*
1) Teach in a classroom where every student has their own device.	54.9%	14.1%
2) Access and use state assessment data (e.g. CRT scores) to support instructional decisions.	75.8%	17.9%
3) Access and use district assessment data to support instructional decisions.	78.4%	18.0%
4) Teach in a classroom where all of the instructional materials are delivered via the device.	47.5%	11.3%
5) Find effective instructional materials on the Internet.	88.9%	26.4%
6) Blended learning, hybrid 1:1, BYOD, Project Based Learning (PBL).	44.4%	9.5%
7) Integrate educational technology into your classroom.	75.1%	18.1%
8) Incorporate library databases into student research projects.	56.0%	12.4%

Professional Development

From the findings reported in this and previous sections, there appear to be gaps between what the state and district technology plans espouse and the existing infrastructure supports with what teachers report that they are prepared to accomplish. As a result of this, the ongoing professional development and growth is a goal present in all district plans. As such, the SETNA 2014 asked teachers a variety of questions about their most recent professional development experiences.

Table 9 summarizes teachers' responses to the prompt: "Please rate your agreement with the following statements as they relate to your technology professional development opportunities." Response options ranged from strongly disagree to strongly agree.

Table 9: Teachers Views of their Professional Development Experiences

Professional Development Characteristics	At least *agree*	*Strongly Agree*
1) They are appropriate for the content I'm expected to teach.	47.5	7.8
2) The activities focus on general integration strategies	50.0	6.5
3) They are appropriate for the grade level of my students	52.2	7.5
4) They generally provide me with the opportunities to try what I have learned.	49.5	8.1
5) The activities are ongoing.	37.0	6.1
6) They are best described as "one-shot" presentations.	49.1	11.1
7) The different activities are a part of a larger related plan.	32.5	4.4
8) They provide opportunities to work with other teachers in my content area.	36.7	4.2
9) Activities are frequently targeted to a specific strategy or method.	51.7	5.1
10) The activities are directed towards the needs of my grade level.	37.5	4.2
11) The activities are directed towards the needs of my school.	43.6	4.6
12) They promote collaboration among my fellow teachers.	39.4	4.6
13) The activities address issues of motivation.	27.5	3.2
14) Accountability: I am expected to apply what I've learned in the classroom.	46.2	7.3
15) They incorporate educational standards into the activities.	49.4	7.6

These data indicate that teachers generally describe professional development (PD) experiences unfavorably. It is worth noting that many aspects of the educational technology plans involve elements of collaboration and integration. Similarly, most contemporary environments also consider issues of motivation paramount for students. Unfortunately, teachers do not appear satisfied with their PD experiences with respect to these factors. They rate characteristics of PD involving motivation, collaboration, and relatedness lowly. In addition, teachers indicate that their grade-level needs are not being met and almost half of teachers indicated that their PD experience was best described as a "one-shot" presentation.

Section 6: Summary of Findings and Recommendations

Summary of Findings

As a member of the Smarter Balanced Assessment Consortium (SBAC), Nevada has taken the step forward in becoming a leader in educational technology. That trend ushers in new responsibilities in light of our dependency on contemporary tools. The data reported here were compiled from a variety of sources, including the State and District Educational Technology Plans, surveys from teachers and technology coordinators, the Nevada Educational Technology Survey, and the Nevada Education SuperHighway report. The following is a summary of findings from the SETNA 2014.

- Nevada schools are nearly completely ready for the SBAC assessments; pilot testing is currently underway
- Technology has become saturated in schools throughout the state
- Although the average age is approximately five years per device, there is considerable inconsistency in the age of devices across districts
- While current technology levels are have improved in terms of connected devices per pupil, there are areas of concern in several districts
- Teachers regularly use a variety of tools to teach, however those tools do not often extend to student use (e.g., presentation software, Internet research, word processing)
- Teachers are do not feel adequately prepared to enter the 21st Century teaching ecology (e.g., device-based instruction, e-books, hybrid learning)
- Bandwidth is wildly inconsistent across districts, depending upon school size
- Teachers are critical of the Internet connection
- Some tools are approaching "saturation," including LCD projectors, productivity software, and interactive whiteboards
- Teachers report that their professional development is not meeting their needs;
- Teachers report that the characteristics of their PD are contrary to the literature on successful PD (e.g., collaborative, ongoing, interactive, relevant)
- Technology use patterns imply a direct-instruction or lecture-based ecology

Recommendations from SETNA 2014 Findings

The State Technology Needs Assessment 2014 highlights the work that has been undertaken since the 2012 needs assessment, as well as the progress accomplished in that time. However, it remains clear that Nevada is both diverse and expansive, giving rise to unique challenges in developing strategies to govern and unify the state's educational technology goals. This is perhaps most evident when considering the extremes in the state. Clark County is the fifth largest district in the United States and has indicated several unique goals associated with administering a sprawling district with more than 300,000 students. By stark contrast, Esmeralda County has 67 students in the entire district. Their needs are less about management and more about discovering ways to maximize and repurpose limited resources. As a result of the many continuing challenges identified in this report, the following are some recommendations:

- While the goal of computer-based testing is nearly complete, it is important to close the gap for 14,022 who fail to meet minimum standards for computer-based testing
- Considering the constancy of change, it is vital to establish regular funding initiatives upon which districts may rely; this is particularly relevant given the increased dependence upon tools for assessment
- Target districts that are slow to meet standards and implement their educational technology plans and establish a strategy to move those areas toward success
- A consistent and predictable plan associated with
    - Technology funding level
    - Technology purchasing and deployment in schools
- Explore additional opportunities to provide state-wide professional development for teachers and based on the ideologies described in the technology plans (e.g., collaboration, integration)
- Conduct case studies and/or a needs assessment of 21st Century practices (e.g., device only instruction, hybrid instruction) within classrooms to identify training requirements and barriers to implementation
- Work toward improved connectivity in classrooms and reliability of services provided

References

Jonassen, D. H. (2000). *Computers as mindtools for schools: Engaging critical thinking* (2nd ed.). Upper Saddle River, NJ: Merrill.

Jonassen, D. H. (2005). *Modeling with technology: Mindtools for conceptual change* (3rd ed.). New York, NY: Prentice Hall.

Nevada Department of Education (2013). *Statewide K-12 Enrollment Grows*. NVDOE. Retrieved May 5, 2014: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=0CDkQFjAC&url=http%3A%2F%2Fwww.doe.nv.gov%2Fhome%2FPress_Releases%2FEnrollment_September_24_2013%2F&ei=AmppU-rCBtSoyATFtoDwAQ&usg=AFQjCNGE13-sHu-svosl43UK3nX_obAwoQ&sig2=ioIFFkiWMLzDIXmiWWB29w&bvm=bv.66111022,d.aWw

Smarter Balanced Assessment Consortium. (2014). *Smarter Balanced Assessment Consortium* [website]. Retrieved from http://www.smarterbalanced.org

Appendices

Appendix A – Teacher Survey

State Educational Technology Needs Assessment - Teacher Survey

State Educational Technology Needs Assessment - Teacher Survey

This survey is conducted by the UNLV Center for Research, Evaluation, and Assessment on behalf of the Nevada Board of Education. The results will provide important feedback for the Nevada State Legislature. The data will be tabulated on a district wide basis. This survey is intended to assess your needs with respect to educational technology in your classroom. The survey covers a variety of topics, from your use of technology in terms of teaching and administrative tasks to students' use of these tools.

Note: We use the term 'device" to refer to desktop computer, laptop computer, mobile devices, and tablet computer (e.g., iPads, Microsoft surface, etc.).

Demographics

Demographics Section

This section pertains to your background and general experience with technology.

In which year did you begin teaching?

How long have you been teaching?

- This is my first year
- More than 1 year, but fewer than 3 years
- 3 or more years, but fewer than 5 years
- 5 or more years, but fewer than 10 years
- More than 10 years

How long have you been teaching at your current school?

- This is my first year
- More than 1 year, but fewer than 3 years
- 3 or more years, but fewer than 5 years
- 5 or more years, but fewer than 10 years
- More than 10 years

Which job classification that most closely matches your current position?

- Certified teacher
- Media specialist
- Special education teacher
- Technology teacher/integration specialist
- Other

What type of school accurately describes your current assignment/placement?

- Elementary school (k-5 or k-6)
- Middle school (6-8, 6-9, 7-8, or 7-9)
- High School (9-12 or 10-12)
- Elementary/Middle School (k-8)
- Other

If you teach at the middle school or high school level, which subject(s) do you teach (select all that apply)?

- ☐ I teach elementary school
- ☐ Math
- ☐ Science
- ☐ English/Language Arts/Reading
- ☐ Social Studies/History/Government
- ☐ Physical Education/Health
- ☐ Technology
- ☐ Librarian
- ☐ Foreign Language Arts
- ☐ Specialist or Strategist
- ☐ CTE Program Teacher
- ☐ Other

Are you:

- ○ Male
- ○ Female
- ○ Other
- ○ Choose not to answer

Please rate your experience with technology:

- ○ Very inexperienced (I do not consider myself a technology user. I get someone else to do technology-based tasks for me).
- ○ Inexperienced (I consider myself a novice user. I accomplish assigned tasks, but I am more efficient when I don't use technology to do a job).
- ○ About average (I have enough skills to complete the management and communication tasks expected of me and occasionally will choose to use technology to accomplish something I choose).
- ○ Experienced (My skills are very good. I use a variety of technology tools and I use them efficiently for all aspects of my job).
- ○ Very experienced (I am a technology leader. I use technology efficiently, effectively and in creative ways to accomplish my job. I often teach others to use technology resources).

Existing Technology in the Classroom

Existing Technology in the Classroom

This section pertains to the technology to which you and your students regularly have access in the classroom. Some questions pertain to the age and capabilities of these tools. Although you may not have the exact information, please respond to the best of your knowledge.

Note: We use the term 'device" to refer to desktop computer, laptop computer, mobile devices, and tablet computer (e.g., iPads, Microsoft surface, etc.).

In my classroom, I have a device that I can use for administrative tasks (e.g. grading, email, attendance). If yes, state how many.

○ Yes ☐ ○ No

In general, I find this administrative device easy to use.

○ Strongly agree ○ Agree ○ Neither Agree nor Disagree ○ Disagree ○ Strongly Disagree

Approximately how old is this device in years?

☐

In my classroom, I have a device that I can use for instructional and curricular tasks (e.g. lesson planning, content projection, demonstration). If yes, state how many.

○ yes ☐ ○ No

In general, all devices for instructional and curricular tasks are easy to use.

○ Strongly agree ○ Agree ○ Neither Agree nor Disagree ○ Disagree ○ Strongly Disagree

Approximately how old is this device in years?

In my classroom, I have at least one device that students can use for instructional purposes. If yes, state how many.

- yes
- No

In general, all devices that students' operate for instructional purposes are easy to use.

- Strongly agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

What is the average age of devices that students use in the classroom?

What is the ratio of students to devices during a typical class?

How many devices do you have in your classroom? (Do not include the device you primarily use for administrative tasks).

In general, these devices are easy to use.

- Strongly agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

The devices in my classroom have a wired connection to the Internet.

○ Yes ○ No ○ Don't know

In general, I find the wired connection to be dependable.

○ Strongly Agree ○ Agree ○ Neither Agree nor Disagree ○ Disagree ○ Strongly Disagree

The devices in my classroom have a wireless connection to the Internet.

○ Yes ○ No ○ Don't know

In general, I find the wireless connection to be dependable.

○ Strongly agree ○ Agree ○ Neither Agree nor Disagree ○ Disagree ○ Strongly Disagree

The connection speed for classroom devices is such that typical online videos will begin playing:

○ Very Quickly ○ Quickly ○ Neither Quickly nor Slowly ○ Slowly ○ Very Slowly ○ Don't Know

What comments do you have regarding the technology available in your classroom?

Teacher Preparation and Technology Readiness

Teacher Preparation and Technology Readiness Section

This section pertains to how ready and prepared you are to use different technologies. It also

applies to your ability to use technology for specific tasks and in certain situations.

Please indicate the degree to which you are currently prepared to use the following tools for instructional purposes:

	Very Well Prepared	Well Prepared	Prepared	Not Prepared	Not at all Prepared	Not Applicable
Audio or video podcasts (access or create)	○	○	○	○	○	○
Audio/Video production/editing (Audacity, GarageBand, iMovie, MovieMaker, etc.)	○	○	○	○	○	○
Classroom response systems (clickers, etc.)	○	○	○	○	○	○
Classroom voice amplification systems	○	○	○	○	○	○
Content management systems/websites (Moodle, Canvas, Blackboard, etc.)	○	○	○	○	○	○
Content specific applications (math, science, music, etc.)	○	○	○	○	○	○
Database software	○	○	○	○	○	○
	Very Well Prepared	Well Prepared	Prepared	Not Prepared	Not at all Prepared	Not Applicable
Digital camera	○	○	○	○	○	○
Digital video camera	○	○	○	○	○	○
Document camera	○	○	○	○	○	○
Drill and practice	○	○	○	○	○	○
E-mail (student)	○	○	○	○	○	○
Handheld or mobile device	○	○	○	○	○	○
Image/photo editing	○	○	○	○	○	○
	Very Well Prepared	Well Prepared	Prepared	Not Prepared	Not at all Prepared	Not Applicable
Integrated learning systems (CompassLearningOdessy, Plato Learning, etc.)	○	○	○	○	○	○
Interactive whiteboard software (Promethean, SMART Notebook, etc.)	○	○	○	○	○	○
Internet resources	○	○	○	○	○	○
LCD projector	○	○	○	○	○	○
Library catalogs	○	○	○	○	○	○
Online research databases available through the school media center/library	○	○	○	○	○	○
Presentation software	○	○	○	○	○	○
	Very Well Prepared	Well Prepared	Prepared	Not Prepared	Not at all Prepared	Not Applicable
Probes and/or probeware	○	○	○	○	○	○
Scanner	○	○	○	○	○	○
Simulations	○	○	○	○	○	○
Spreadsheets	○	○	○	○	○	○
Tutorials	○	○	○	○	○	○
Videoconferencing	○	○	○	○	○	○
Video streaming (Discovery, Learn 360, TeacherTube, etc.)	○	○	○	○	○	○
	Very Well Prepared	Well Prepared	Prepared	Not Prepared	Not at all Prepared	Not Applicable

Please indicate the degree to which you are currently prepared to accomplish the following:

	Very Well Prepared	Well Prepared	Prepared	Not Prepared	Not at all Prepared	Not Applicable
Teach in a classroom where every student has their own device.	○	○	○	○	○	○
Access and use state assessment data (e.g. CRT scores) to support instructional decisions.	○	○	○	○	○	○
Access and use district assessment data to support instructional decisions.	○	○	○	○	○	○
Teach in a classroom where all of the instructional materials are delivered via the device.	○	○	○	○	○	○
Find effective instructional materials on the Internet.	○	○	○	○	○	○
Blended learning, hybrid 1:1, BYOD, Project Based Learning (PBL).	○	○	○	○	○	○
Integrate educational technology into your classroom.	○	○	○	○	○	○
Incorporate library databases into student research projects.	○	○	○	○	○	○

What comments do you have regarding your teacher preparation opportunities?

Professional Development

Professional Development Section

This section pertains to training and/or professional development that you may have received while you have been a teacher in Nevada.

Which of the following professional development opportunities have been available to you during the current school year?

- One-on-one training from a technology specialist or coach
- Informal training from colleagues
- Group training related to technology (e.g. staff development days)
- Online professional development courses
- Other (specify)

For the next group of questions, please estimate the number of HOURS you have participated in available technology professional development activities during the current school year.

Informal training from colleagues	
In-service training related to technology	
Online professional development courses	
One-on-one training from a technology specialist	

How would you rate the QUALITY of the technology-related professional development opportunities sponsored by the following entities?

	Very High	High	Neutral	Low	Very Low	N/A
District						
Local Higher Education Institution						
Regional Professional Development Program (RPDP)						
School						
Other (specify)						

Please rate your agreement with the following statements as they relate to your technology professional development opportunities.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
They are appropriate for the content I'm expected to teach.					
The activities focus on general integration strategies					
They are appropriate for the grade level of my students					
They generally provide me with the opportunities to try what I have learned.					
The activities are ongoing.					
They are best described as "one-shot" presentations.					
The different activities are a part of a larger related plan.					
They provide opportunities to work with other teachers in my content area.					
Activities are frequently targeted to a specific strategy or method.					
The activities are directed towards the needs of my grade level.					
The activities are directed towards the needs of my school.					
They promote collaboration among my fellow teachers.					
The activities address issues of motivation.					
Accountability: I am expected to apply what I've learned in the classroom.					
They incorporate educational standards into the activities.					

What comments do you have regarding your professional development opportunities?

Classroom Technology Use

Classroom Technology Use Section

This section pertains to the ways that you generally use technology in your classes. This includes your use, students' use, and technology for planning purposes. Please consider technology to which you have access in your classrooms all the time and do not include items that may be available elsewhere in the school (e.g., for checkout).

Please indicate how frequently the tools are used in your classroom.

Note: The first column represents the tools that you use for instructional purposes. The second column represents tools that your students use for learning purposes.

	Teacher Use					Student Use				
	Daily	Weekly	Infrequently	Never	Not Available	Daily	Weekly	Infrequently	Never	Not Available
Audio or video podcasts (access or create)	○	○	○	○	○	○	○	○	○	○
Audio/Video production/editing (Audacity, GarageBand, iMovie, MovieMaker, etc.)	○	○	○	○	○	○	○	○	○	○
Classroom response systems (clickers, etc.)	○	○	○	○	○	○	○	○	○	○
Classroom voice amplification systems	○	○	○	○	○	○	○	○	○	○
Content management systems/websites (Moodle, Canvas, Blackboard, etc.)	○	○	○	○	○	○	○	○	○	○
Content specific applications (math, science, music, etc.)	○	○	○	○	○	○	○	○	○	○
Database software	○	○	○	○	○	○	○	○	○	○
Digital camera	○	○	○	○	○	○	○	○	○	○
	Daily	Weekly	Infrequently	Never	Not Available	Daily	Weekly	Infrequently	Never	Not Available
Digital video camera	○	○	○	○	○	○	○	○	○	○
Document camera	○	○	○	○	○	○	○	○	○	○
Drill and practice	○	○	○	○	○	○	○	○	○	○
E-mail (student)	○	○	○	○	○	○	○	○	○	○
Handheld or mobile device	○	○	○	○	○	○	○	○	○	○
Image/photo editing	○	○	○	○	○	○	○	○	○	○
Integrated learning systems (CompassLearningOdessy, Plato Learning, etc.)	○	○	○	○	○	○	○	○	○	○
Interactive whiteboard software (Promethean, SMART Notebook, etc.)	○	○	○	○	○	○	○	○	○	○
	Daily	Weekly	Infrequently	Never	Not Available	Daily	Weekly	Infrequently	Never	Not Available
Internet resources	○	○	○	○	○	○	○	○	○	○
LCD projector	○	○	○	○	○	○	○	○	○	○
Library catalogs	○	○	○	○	○	○	○	○	○	○
Online research databases available through the school media center/library	○	○	○	○	○	○	○	○	○	○
Presentation software	○	○	○	○	○	○	○	○	○	○
Probes and/or probeware	○	○	○	○	○	○	○	○	○	○
Scanner	○	○	○	○	○	○	○	○	○	○
Simulations	○	○	○	○	○	○	○	○	○	○
	Daily	Weekly	Infrequently	Never	Not Available	Daily	Weekly	Infrequently	Never	Not Available
Spreadsheets	○	○	○	○	○	○	○	○	○	○

What best describes your current practice of using technology in instruction?

- I seldom use technology to deliver instruction.
- I almost exclusively use whole group presentation style either using an interactive whiteboard, PowerPoint or other instructional software to explain or demonstrate concepts or instructions.
- I often use whole group presentation style, but sometimes facilitate students in their use of a variety of information resources and hands-on activities.
- I almost exclusively facilitate student learning by encouraging students to use information resources and hands-on activities.

Do you have access to the following materials via the Internet (select all that apply)?

- District content objectives
- Lessons developed by other district teachers
- District curriculum materials
- Videos related to the curriculum
- Online reports from standardized testing done school-wide
- Do not have access to technology-based materials for planning
- Do not use technology-based materials to make instructional decisions

Check all of the following that you do to help plan with other teachers who teach the same grade level or content area (select all that apply).

- Using web-based tools that permit document sharing (e.g. Google Docs, edmodo, C.E., wikis, blogs)
- Using shared space on the school network
- Emailing files
- Printing and copying documents
- Meet face to face
- Do not regularly plan with other teachers

What comments do you have regarding your use of technology in your classroom?

School-wide Technology Use

School-wide Technology Use Section

This section pertains to technology availability, use, and policies at a school-wide level.

Through a sign up or checkout procedure, I can arrange to have the following technologies available for a finite time in my classroom:

	Yes	No	N/A
Audio/Video production/editing (Audacity, GarageBand, iMovie, MovieMaker, etc.)	○	○	○
Classroom response systems (clickers, etc.)	○	○	○
Classroom voice amplification systems	○	○	○
Content specific applications (math, science, music, etc.)	○	○	○
Database software	○	○	○
Digital camera	○	○	○
Digital video camera	○	○	○
	Yes	No	N/A
Document camera	○	○	○
Drill and practice	○	○	○
Handheld or mobile device	○	○	○
Image/photo editing	○	○	○
Integrated learning systems (CompassLearningOdessy, Plato Learning, etc.)	○	○	○
Interactive whiteboard software (Promethean, SMART Notebook, etc.)	○	○	○
LCD projector	○	○	○
	Yes	No	N/A
Probes and/or probeware	○	○	○
Scanner	○	○	○
Simulations	○	○	○
Videoconferencing	○	○	○
Video streaming (Discovery, Learn 360, TeacherTube, etc.)	○	○	○
Visualization/graphic organizers (Inspiration, etc.)	○	○	○

Please rate your level of agreement with the following statements:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The system in place for technology support is adequate.	○	○	○	○	○
The time required to get technical assistance is minimal.	○	○	○	○	○
I can manage the majority of technical issues that arise with my classroom devices.	○	○	○	○	○
I can access the websites I need for instruction.	○	○	○	○	○
The devices to which I have access are in good working condition.	○	○	○	○	○

I believe the Internet filter used at my school is:

- Too restrictive
- About right
- Not restrictive enough
- Don't know

I believe that the administrators responsible for the Internet filter are willing to consider a request for access:

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

What comments do you have regarding the technology usage in your school as a whole?

SETNA - Parent Survey

State Educational Technology Needs Assessment - Parent Survey

This survey is conducted by the UNLV Center for Research, Evaluation, and Assessment on behalf of the Nevada Board of Education. The results will provide important feedback for the Nevada State Legislature. The data will be tabulated on a district wide basis. This survey is intended to allow parents and guardians the opportunity to comment on the technology that is being used in schools.

In what school district is your student currently enrolled?

In what grade is your child currently enrolled? If you have multiple children in school, please select all applicable levels.

Does your student regularly use technology to complete HOMEWORK? If so, what types of activities do they complete?

Does your student use technology regularly IN SCHOOL? If so, what types of activities do they complete?

What are your expectations regarding technology use in schools? Are these expectations being met?

What other comments do you have regarding the use of technology in your student's school?

What are your concerns regarding your student's use of technology in school?

What other comments do you have about technology in your student's school?

State Educational Technology Needs Assessment - Technology Coordinator Survey

State Educational Technology Needs Assessment - Technology Coordinator Survey

This survey is conducted by the UNLV Center for Research, Evaluation, and Assessment on behalf of the Nevada Board of Education. The results will provide important feedback for the Nevada State Legislature. The data will be tabulated on a district wide basis. This survey is intended to assess your views and perceptions of technology throughout your school and across the district. The survey covers a variety of topics, from technology planning to teachers' use of technology in terms of teaching and administrative tasks.

Technology Capacity

Technology Capacity

The following items pertain to the technology capacity in the average classroom throughout your district. Please

In the following three text boxes, describe three relatively common classrooms that a visitor might see in your district. The three classrooms should represent your view of the low, middle, and top in terms of technology availability in your district. In your description, include the approximate number, age, and condition of the computers in the room, the presence or absence of a projector, the Internet connection capacity and any other technologies that might be available.

Common low-end classroom:

Common middle classroom:

Common high-end classroom:

Next to each of the designations below, move the slider to a number that represents the approximate percentage of classrooms that closely fit the description:

	0	10	20	30	40	50	60	70	80	90	100
Low-end classrooms:											
Middle classrooms:											
High-end classrooms:											

What support is available to teachers when they need technical assistance in their classrooms?

What other comments do you have regarding the technology capacity in your district's classrooms?

Technology Planning

Technology Planning

This section pertains to planning for technology use at local, district, and state levels.

Describe the role of the current STATE educational technology plan in the design, delivery, and planning of the educational technology in your district.

Describe the role of the current DISTRICT educational technology plan in the design, delivery, and planning of educational technology in your district.

Do the schools in your district typically engage in significant technology planning? If so, how does this occur? Do they have school technology plans? Do they have technology committees?

Describe the status of PLANNING for technology in your district. What are the major challenges?

Describe in general terms the FUNDING for technology in your district. What are the major sources of funding? Is the funding consistent and predictable?

What role does open source software such as OpenOffice, Apache, or Firefox have in your district's technology plan?

What other comments do you have regarding technology planning in your district?

Role of Technologies

Role of Technologies in Your District

The following items refer to the role of technology throughout the district as the tools pertain to a variety of tasks.

What do you think the opportunities and challenges associated with increasing the use of

computer-based assessments are in your district?

What do you think are the opportunities and challenges associated with the expanded use of laptops to supplement and in some instances replace textbooks?

Would the expanded distribution of laptop computers have a positive impact on student outcomes? Why or why not?

What are some of the more advanced ways teachers in your district are utilizing the Internet to improve student outcomes?

What are some of the greatest challenges associated with the increased use of the Internet for teachers in your district?

Are teachers in your district using the Internet to collaborate with other teachers in your district? If yet, how?

What are some of the most important ways teachers can utilize the web to support teaching?

What other comments do you have regarding the role of technologies in your district classrooms?

Professional Development

Professional Development

These items pertain to the professional development that is available to teachers throughout your school and district.

What professional development is available to teachers in your district?

Describe what you believe are the key components to effective professional development.

How do these key components compare to the professional development opportunities you are able to provide to teachers?

Other Comments

Is there anything else you would like to share before completing this survey?

- Yes
- No

Appendix D – Letters to Constituents

Superintendent Letter

Dear Superintendent,

The Center for Research Evaluation, and Assessment, University of Nevada, Las Vegas will be conducting the legislatively mandated State Technology Needs Assessment Survey (STNA). This survey will provide important feedback for the Nevada State Legislature with regards to each district's needs with respect to educational technology in classrooms. The survey covers a variety of topics, from the use of technology in terms of teaching and administrative tasks to students' use of these tools. This electronic survey will be sent to the designated IT Coordinator in each school district, as well as to samples of teachers, administrators and parents. The introduction letter will provide a link to Qualtrics where the individuals will be invited to take the survey.

We will be using the same sampling guidelines as were used for the 2008 STNA. For districts with fewer than 1000 students, all of the classroom teachers will be surveyed. In districts with student populations between 1000 and 10,000 students, we will be surveying 100 teachers each from elementary, middle school/junior high and high schools (total 300 individuals). Districts greater than 10,000 students, 20% of the teacher workforce will be randomly surveyed.

In order to gain access to parents to take the survey, we will be sending letters to each school principal informing them of the surveys, and asking them to distribute them in the most efficient way possible for their school site. They may have a school wide parent notification system, teachers who use regular parent letter emails, a school event such as parent teacher meetings, fundraisers or spirit days. For these events, perhaps a community computer could be made available for parents to complete the 7-question survey. Principals may have email lists of club, sport or band parents that could request the completion of the surveys with the appropriate links. We will also be contacting the Nevada State PTA for dispersal of the information.

In total we will be contacting the IT Coordinators for 17 districts, 7000 teachers and as many parents as can be contacted in the possible ways explained above. It would seem that this data would represent a good picture of the technology needs and uses in Nevada from many perspectives.

We greatly appreciate your help in supporting your principals, teachers and It Coordinators in completing this critical survey.

Thank you in advance for your support. Please feel free to contact us with any questions.

Respectfully,

PG Schrader, Gwen Marchand, Neal Strudler, and, Manognya Murukutla

UNLV Center for Research, Evaluation, and Assessment

Technology Coordinator Letter

Dear IT Coordinator,

The Center for Research Evaluation and Assessment, University of Nevada, Las Vegas will be conducting the legislatively mandated State Technology Needs Assessment Survey (STNA). This survey will provide important feedback for the Nevada State Legislature with regards to each district's needs with respect to educational technology in classrooms. The survey covers a variety of topics, from your use of technology in terms of teaching and administrative tasks to students' use of these tools.

We will be using the same sampling guidelines as were used for the 2008 STNA. For districts with fewer than 1000 students, all of the classroom teachers will be surveyed. In districts with student populations between 1000 and 10,000 students, we will be surveying 100 teachers each from elementary, middle school/junior high and high schools (total 300 individuals). Districts greater than 10,000 students, 20% of the teacher workforce will be randomly surveyed.

In order to gain access to parents to take the surveys, we will be sending letters to each school principal informing them of the surveys, and asking them to distribute them in the most efficient way possible for their school site. They may have a school wide parent notification system, teachers who use regular parent letter emails, a school event such as parent teacher meetings, fundraisers or spirit days. For these events, perhaps a community computer could be made available for parents to complete the 7-question survey. Principals may have email lists of club, sport or band parents that could request the completion of the surveys with the appropriate links. We will also be contacting the Nevada State PTA for dispersal of the information.

In total we will be contacting the IT Coordinators for 17 districts, 7000 teachers and as many parents as can be contacted in the possible ways explained above. It would seem that this data would represent a good picture of the technology needs and uses in Nevada from many perspectives.

As the designated IT Coordinator in your district, please go to the following link and complete the survey:

https://unlv.co1.qualtrics.com/SE/?SID=SV_d5TvoXiunMtairz

Also attached are the Superintendent, Principal, and Teacher Letters we sent out this week.
Thank you in advance for your support.

Please feel free to contact us with any questions.

Respectfully,

PG Schrader
Gwen Marchand
Neal Strudler
and
Manognya Murukutla
UNLV Center for Research, Evaluation, and Assessment

Principal Letter

Dear Principal,

The Center for Research, Evaluation, and Assessment, University of Nevada, Las Vegas will be conducting the legislatively mandated State Technology Needs Assessment Survey (STNA). This survey will provide important feedback for the Nevada State Legislature with regards to your needs with respect to educational technology in your classrooms. The survey covers a variety of topics, from your use of technology in terms of teaching and administrative tasks to students' use of these tools. This electronic survey will be sent to the designated IT Coordinator in each school district, as well as to your school staff, teachers and parents. The letter provides a link to a survey site, Qualtrics, where parents can be invited to take the survey.

We will also be using the sampling guidelines from the 2008 STNA. For districts with fewer than 1000 students, all of the classroom teachers will be surveyed. In districts with student populations between 1000 and 10,000 students, we will be surveying 100 teachers each from elementary, middle school/junior high and high schools (total 300 individuals). In districts greater than 10,000 students, 20% of the teacher workforce will be randomly surveyed. We will be emailing the survey letters to your certificated faculty. We have obtained their email addresses from your school Websites. If a faculty member determines that they did not receive an invitation to complete the survey PLEASE give them the link below.

In order to gain access to parents to take the survey, we are asking you to distribute the parent survey request letters the most efficient way for you. You may have a school wide parent notification system, teachers that have regular parent letter emails, a school event such as parent teacher meetings, fundraisers, or spirit days. For these events, perhaps a community computer could be made available for parents to complete the 7-question survey. You may have email lists of club, sport or band parents that you could request the completion of the surveys by forwarding the attached letter with the survey links. Our goal is to get feedback from as many parents as possible in order to get an accurate perspective.

In total we will be contacting the IT individuals for 17 districts, 7000 teachers and as many parents that can be contacted in the possible ways explained above. These data will hopefully represent a good picture of the technology needs and uses in Nevada from many perspectives. We greatly appreciate your help!

Please have your *parents* respond no later than: 5/5/2014
Please have your *teachers* respond no later than: 5/5/2014

Thank you in advance for your support.

Respectfully,

PG Schrader
Gwen Marchand
Neal Strudler
and
Manognya Murukutla
UNLV Center for Research, Evaluation, and Assessment

Teacher Letter

Dear Teacher,

The Center for Research, Evaluation and Assessment, University of Nevada, Las Vegas will be conducting the legislatively mandated State Technology Needs Assessment Survey (STNA). This survey will provide important feedback for the Nevada State Legislature with regards to each district's needs with respect to educational technology in classrooms. The survey covers a variety of topics, from your use of technology in terms of teaching and administrative tasks to students' use of these tools. We ask that you go to the following link and take the teacher survey:

https://unlv.co1.qualtrics.com/SE/?SID=SV_8CvAaAKDxpf8WoJ

This survey will provide important feedback for the Nevada State Legislature. The results will be tabulated on a district wide basis. If one of your colleagues has not received this email, please feel free to pass it along to them.

In total we will be contacting the IT individuals for 17 districts, 7000 teachers and parents. We are asking your principal to determine the best way to distribute the parent surveys. If you have a classroom email letter, a school wide activity or another idea to contact as many parents as possible, please talk to your principal. We believe this survey will represent a good picture of the technology needs and uses in Nevada from many perspectives.

We greatly appreciate your assistance in completing the survey. We realize that you are incredibly busy and thank you for your time and support. Please feel free to contact us with any questions.

Respectfully,

PG Schrader
Gwen Marchand
Neal Strudler
and
Manognya Murukutla
UNLV Center for Research, Evaluation, and Assessment

Parent Letter

Dear Parents,

The Center for Research, Evaluation and Assessment, University of Nevada, Las Vegas will be conducting the legislatively mandated State Technology Needs Assessment Survey (STNA). This survey will provide important feedback for the Nevada State Legislature with regards to each district's needs with respect to educational technology in classrooms. The survey covers a variety of topics, from the use of technology in terms of teaching and administrative tasks to students' use of these tools. This electronic survey will be sent to a sample of teachers and parents along with the designated IT Coordinators in each school district.

We ask that you complete the following 7-question parents survey. Your responses are extremely important, as the information you will provide will be included in the report to the Nevada State Legislature.

We greatly appreciate your time to complete this survey.

Please click on "next", to begin the survey.

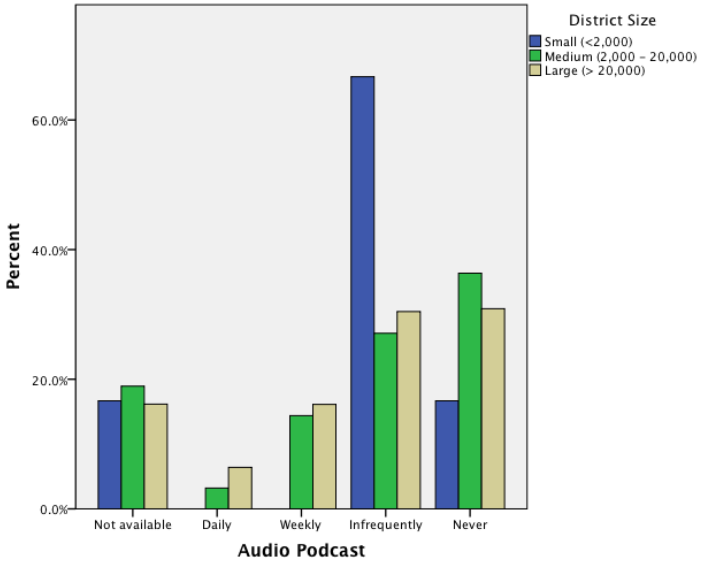
Thank you for your support.

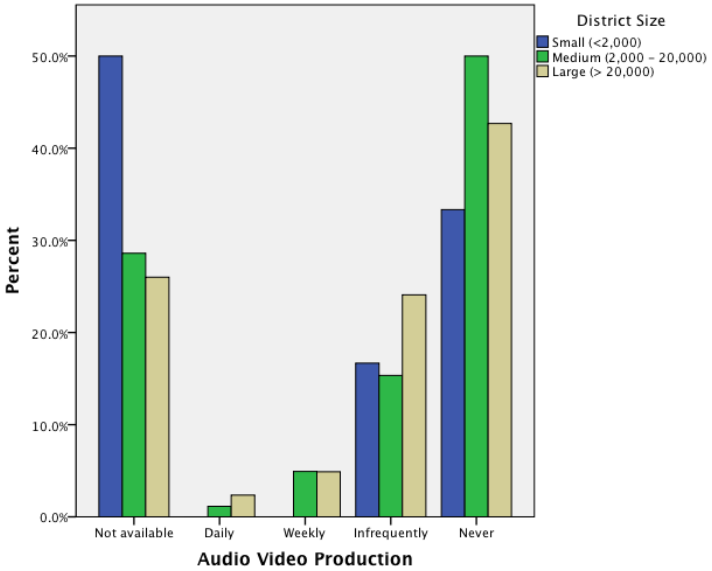
Respectfully,

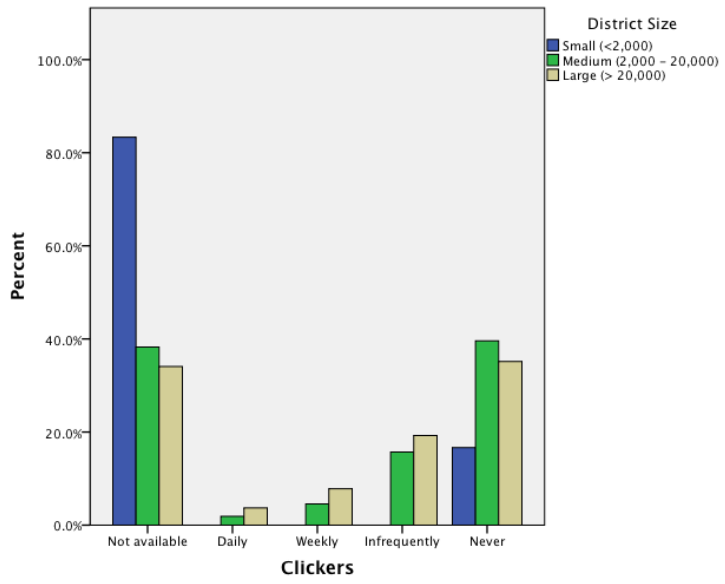
PG Schrader
Gwen Marchand
Neal Strudler
and
Manognya Murukutla
UNLV Center for Research, Evaluation, and Assessment

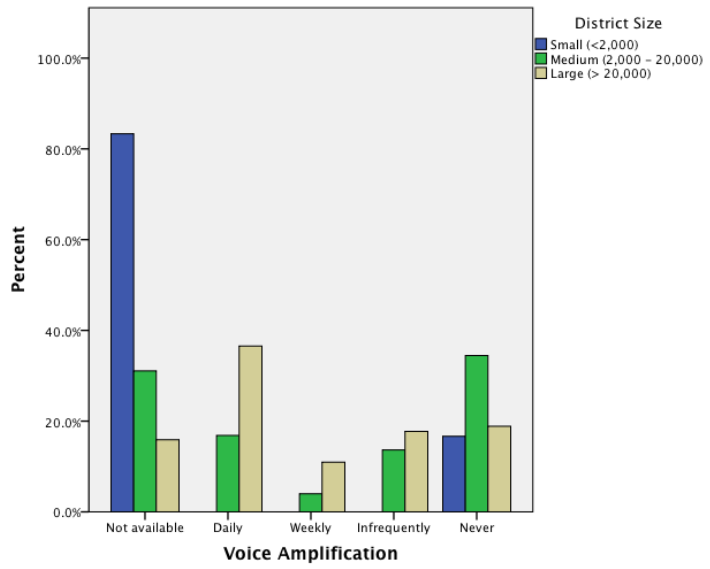
If the link does not work, please copy and paste the following URL:
https://unlv.co1.qualtrics.com/SE/?SID=SV_3elGjYo8JF04Bvv

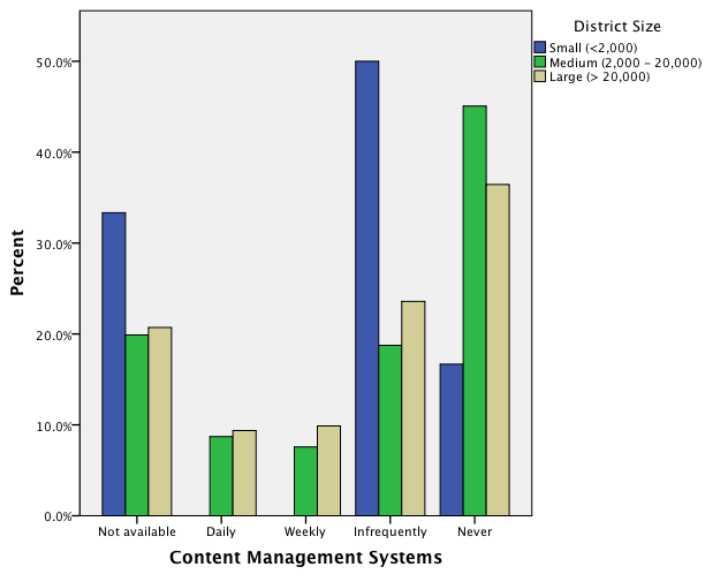
Appendix E – Figures of Teacher Use Organized Technology and District Size






District Size
Small (<2,000)
Medium (2,000 - 20,000)
Large (> 20,000)
Percent
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Not available
Daily
Weekly
Infrequently
Never
Clickers


District Size
Small (<2,000)
Medium (2,000 - 20,000)
Large (> 20,000)
Percent
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
Not available
Daily
Weekly
Infrequently
Never
Voice Amplification


District Size
Small (<2,000)
Medium (2,000 - 20,000)
Large (> 20,000)
Percent
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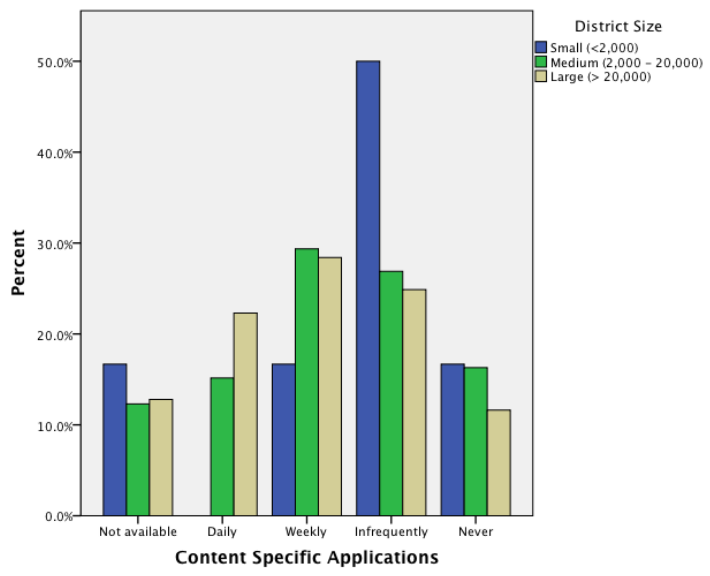
30.0%
20.0%
10.0%
0.0%
Not available
Daily
Weekly
Infrequently
Never
Content Management Systems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Medium (2,000 - 20,000)
Large (> 20,000)
Percent
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20.0%
10.0%
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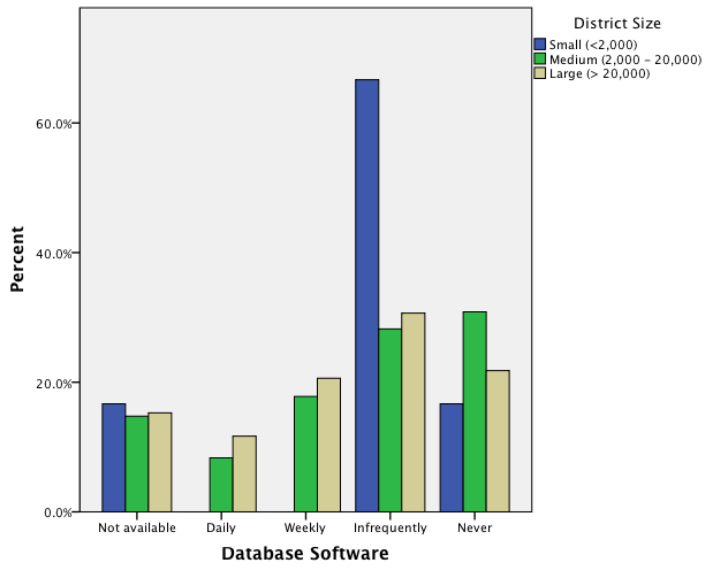
Not available
Daily
Weekly
Infrequently
Never
Content Specific Applications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Large (> 20,000)
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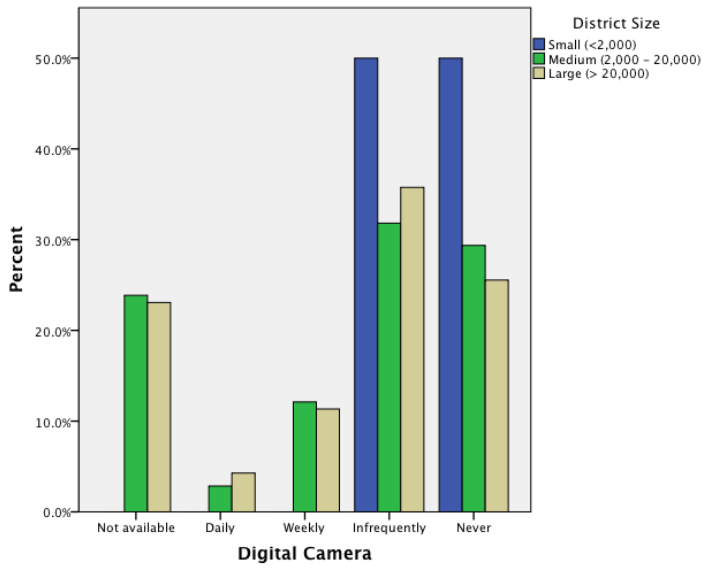
Not available
Daily
Weekly
Infrequently
Never
Database Software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Large (> 20,000)
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20.0%
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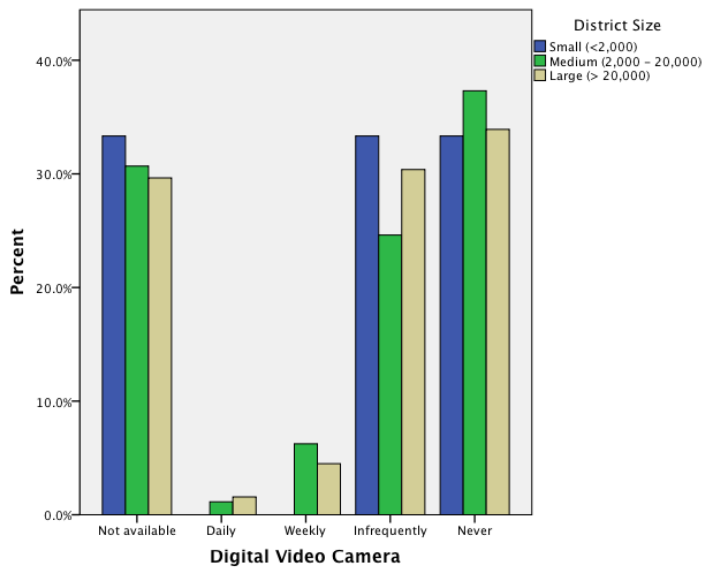
Not available
Daily
Weekly
Infrequently
Never
Digital Camera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Medium (2,000 - 20,000)
Large (> 20,000)
Percent
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20.0%
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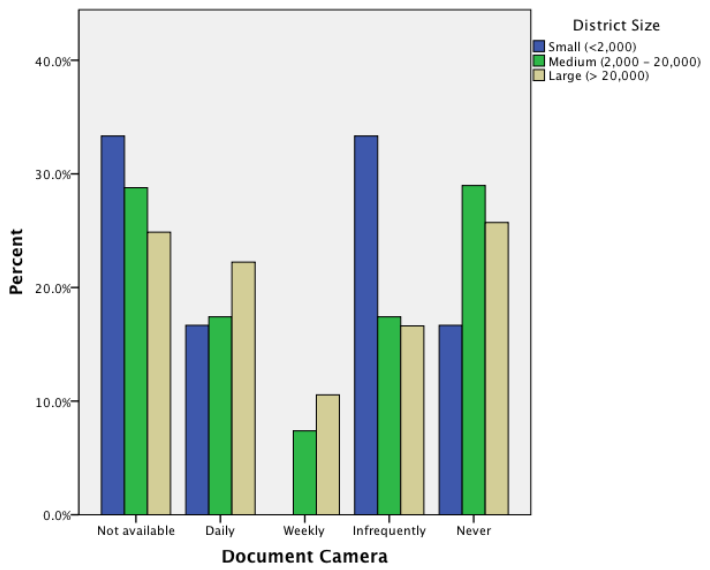
Not available
Daily
Weekly
Infrequently
Never
Digital Video Camera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Large (> 20,000)
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10.0%
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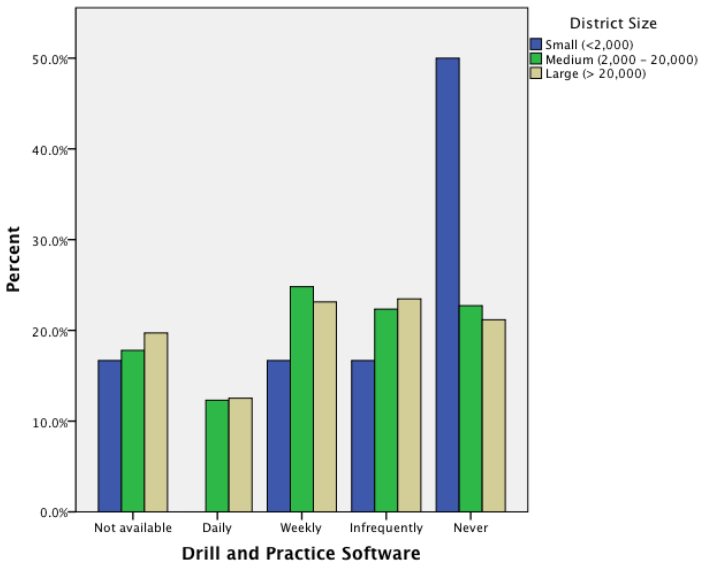
Not available
Daily
Weekly
Infrequently
Never
Document Camera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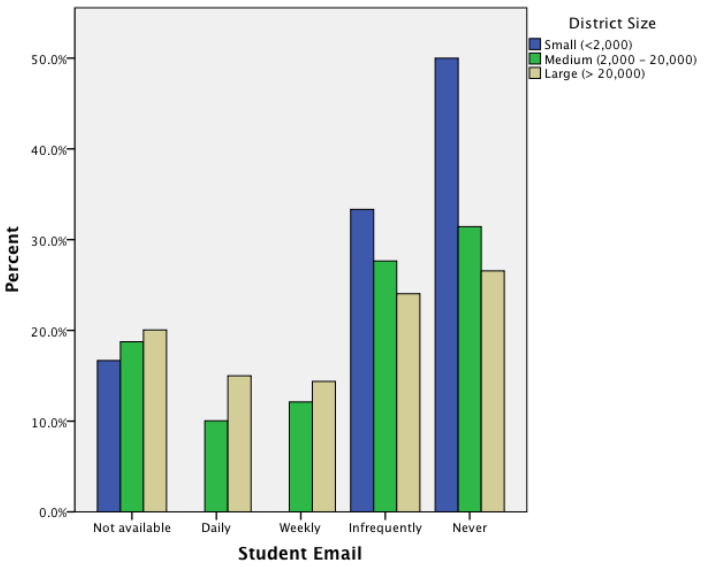
Not available
Daily
Weekly
Infrequently
Never
Drill and Practice Software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Large (> 20,000)
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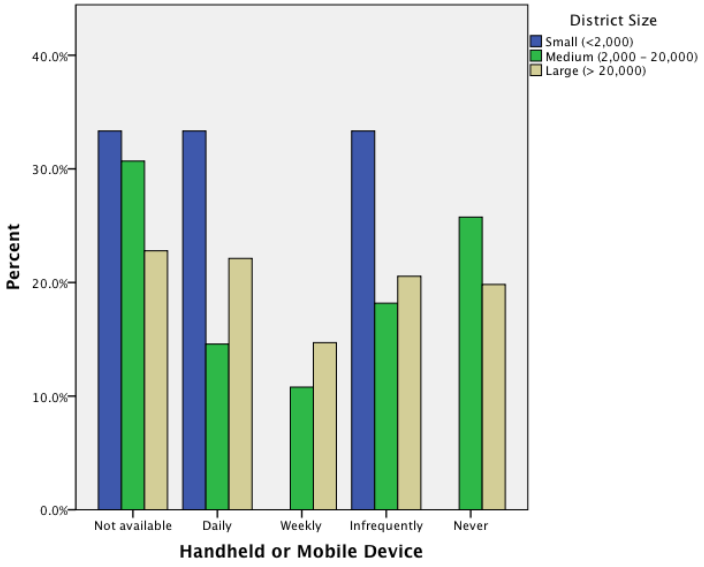
Not available
Daily
Weekly
Infrequently
Never
Student Email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Large (> 20,000)
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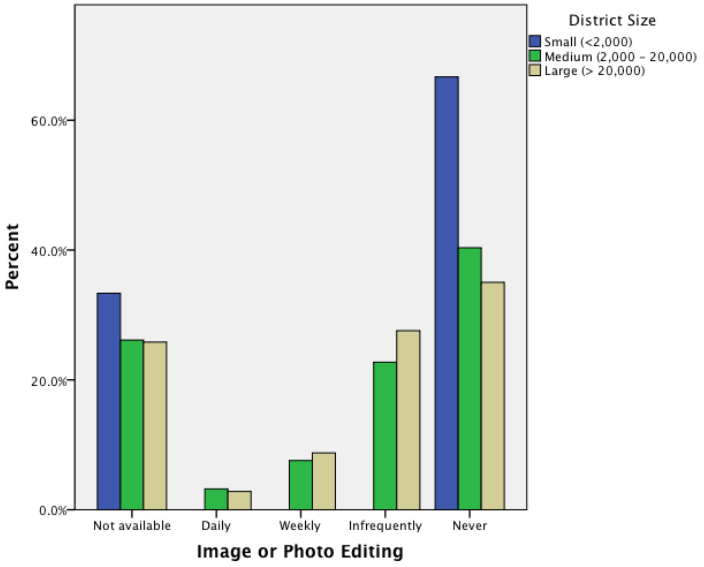
20.0%
10.0%
0.0%
Not available
Daily
Weekly
Infrequently
Never
Handheld or Mobile Device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Daily
Weekly
Infrequently
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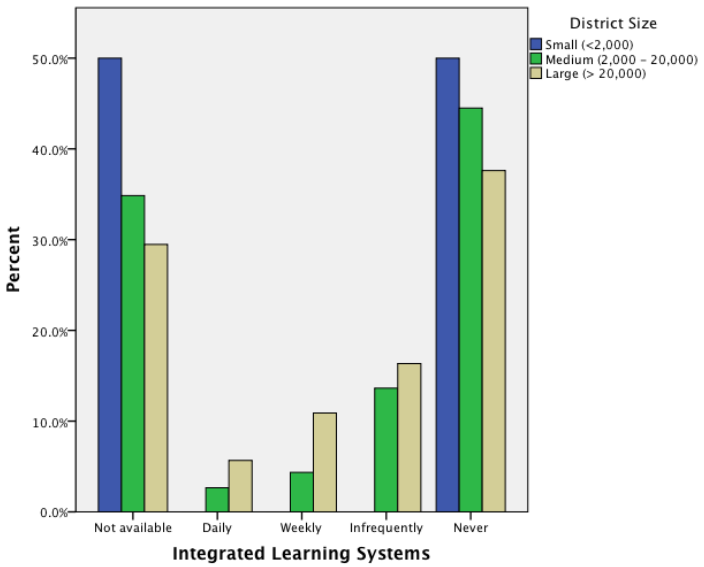
Image or Photo Editing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10.0%
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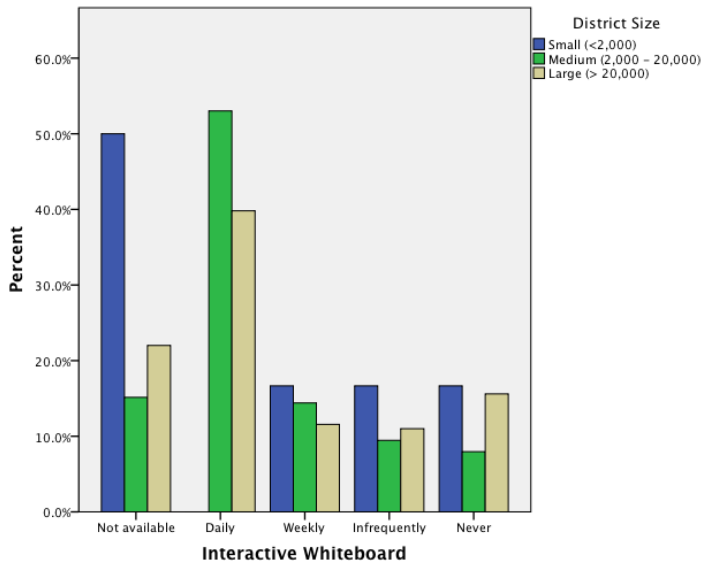
Not available
Daily
Weekly
Infrequently
Never
Integrated Learning Systems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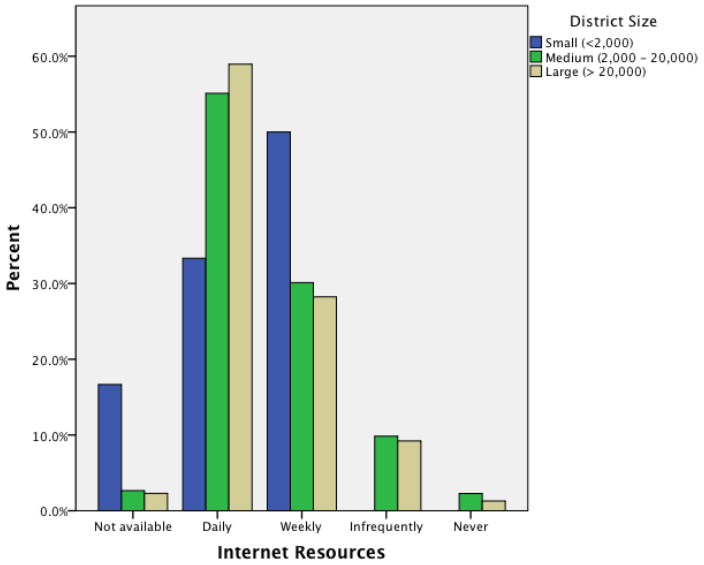
Not available
Daily
Weekly
Infrequently
Never
Interactive Whiteboard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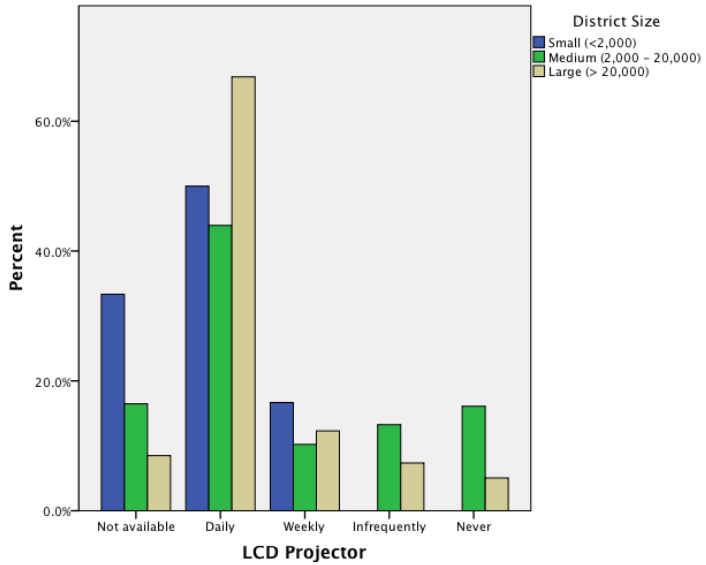
Not available
Daily
Weekly
Infrequently
Never
Internet Resources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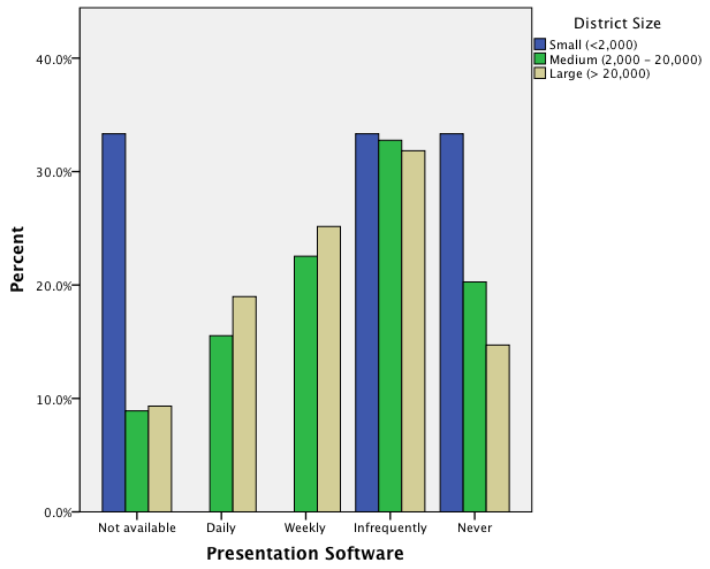
Daily
Weekly
Infrequently
Never
LCD Projector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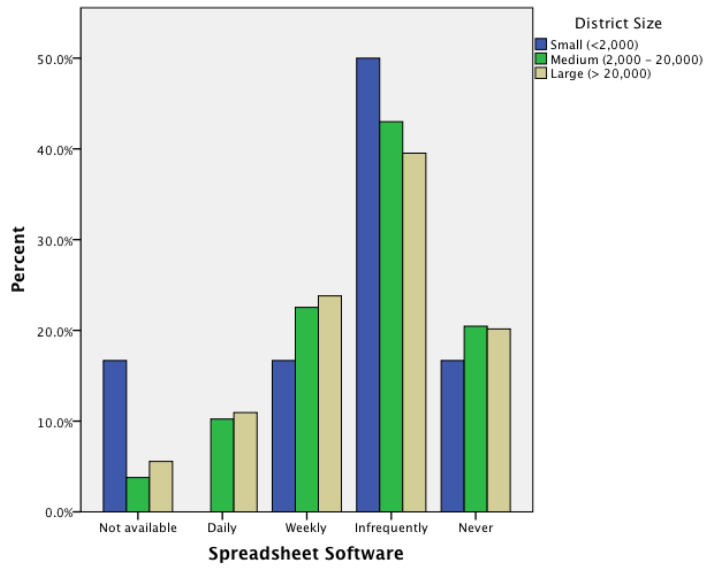
Not available
Daily
Weekly
Infrequently
Never
Presentation Software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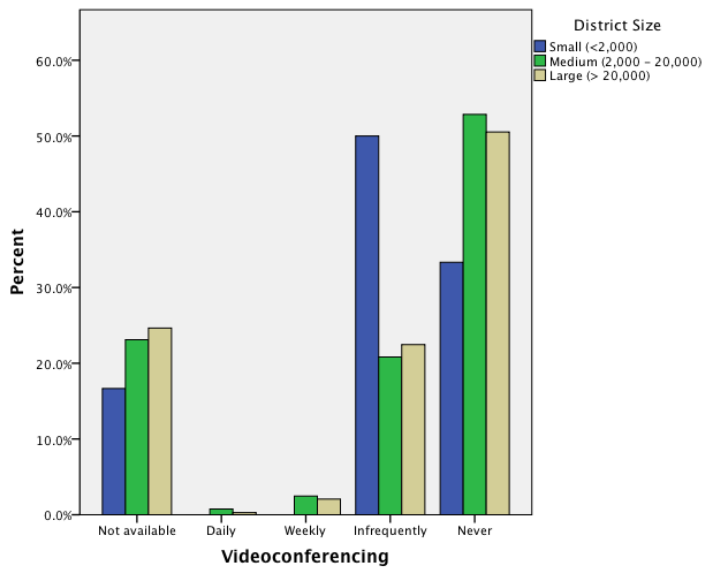
Not available
Daily
Weekly
Infrequently
Never
Spreadsheet Software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Large (> 20,000)
Percent
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30.0%
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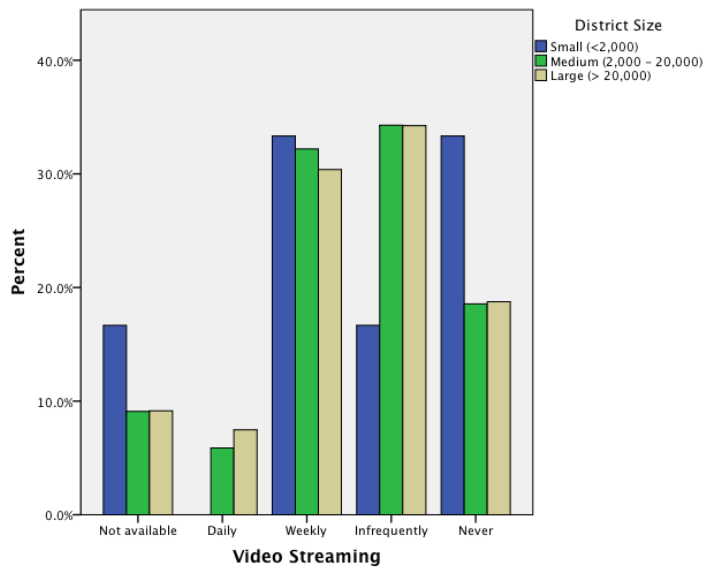
Not available
Daily
Weekly
Infrequently
Never
Videoconferencing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Percent
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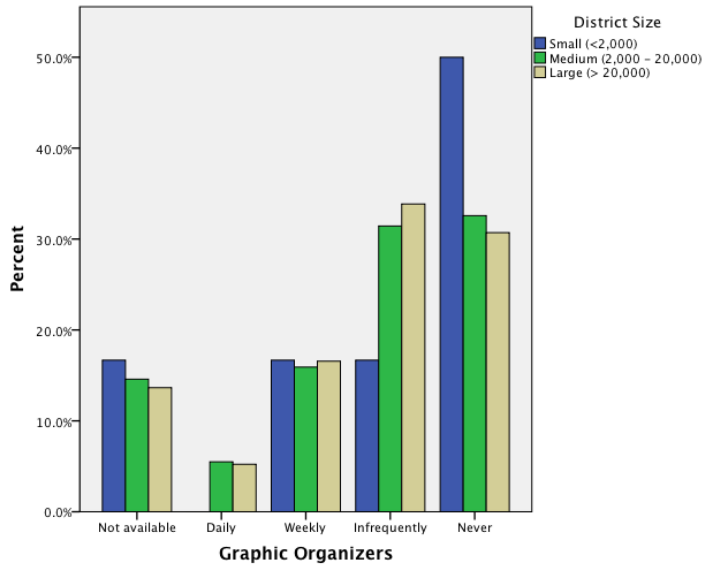
Not available
Daily
Weekly
Infrequently
Never
Video Streaming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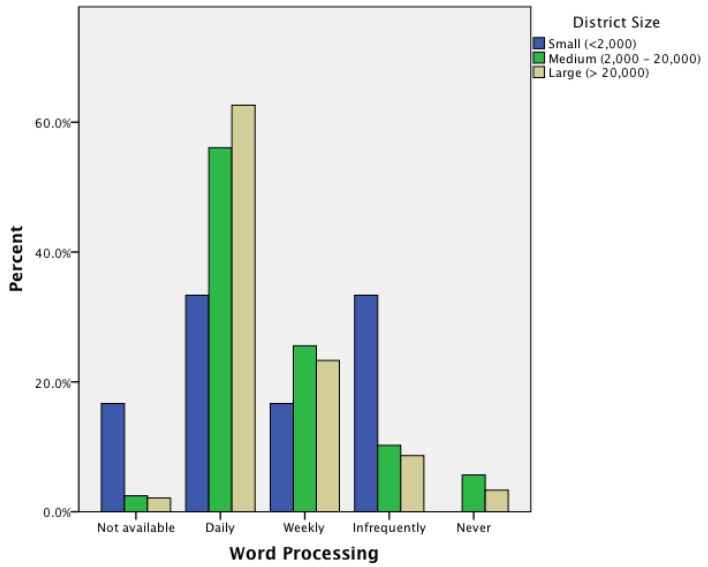
Not available
Daily
Weekly
Infrequently
Never
Graphic Organizers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Medium (2,000 - 20,000)
Large (> 20,000)
Percent
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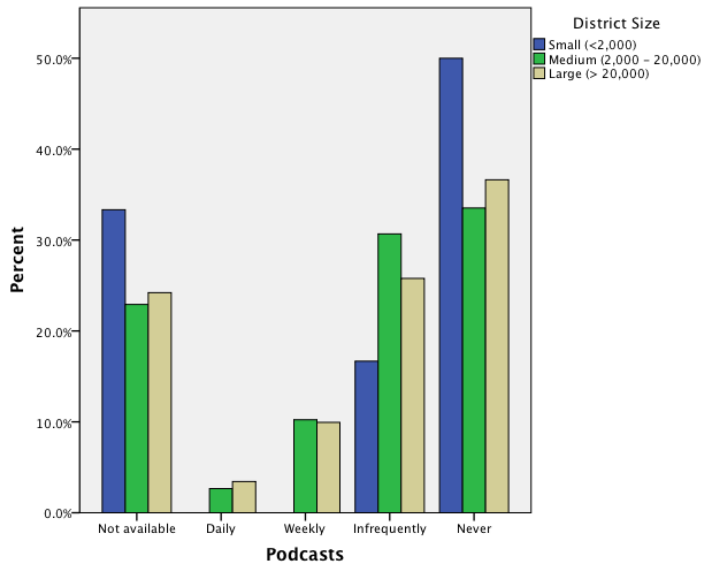
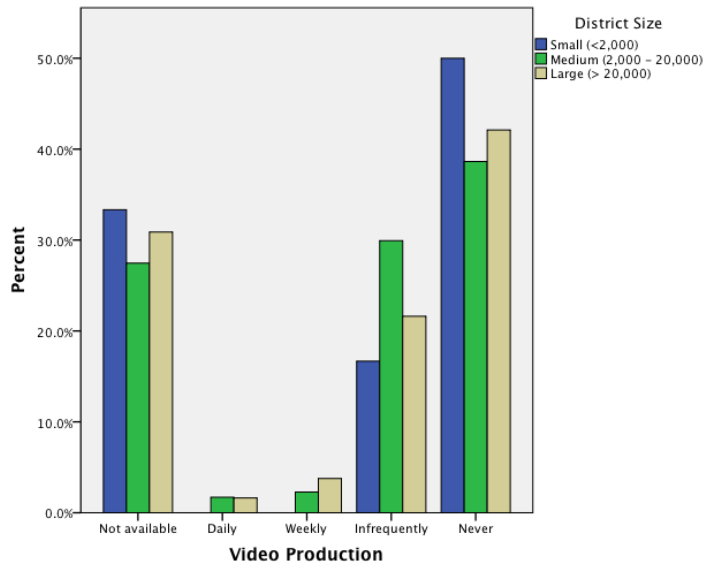
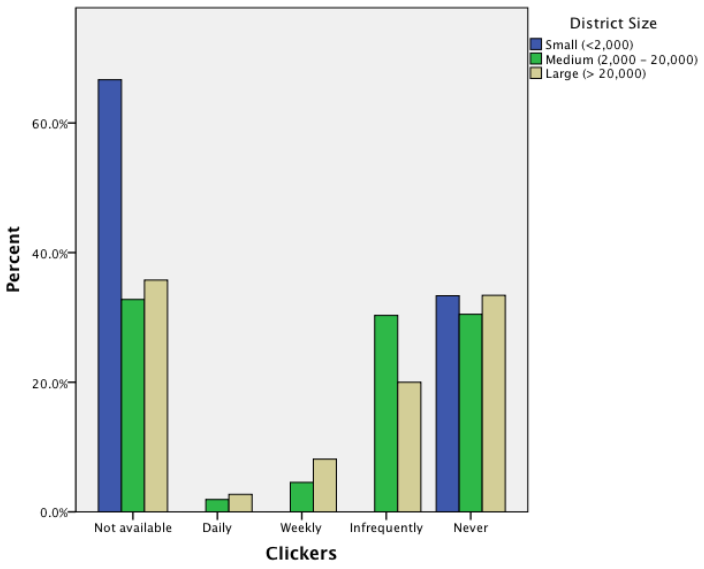
Not available
Daily
Weekly
Infrequently
Never
Word Processing

Appendix F – Figures of Student Use Organized Technology and District Size






District Size
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Medium (2,000 - 20,000)
Large (> 20,000)
Percent
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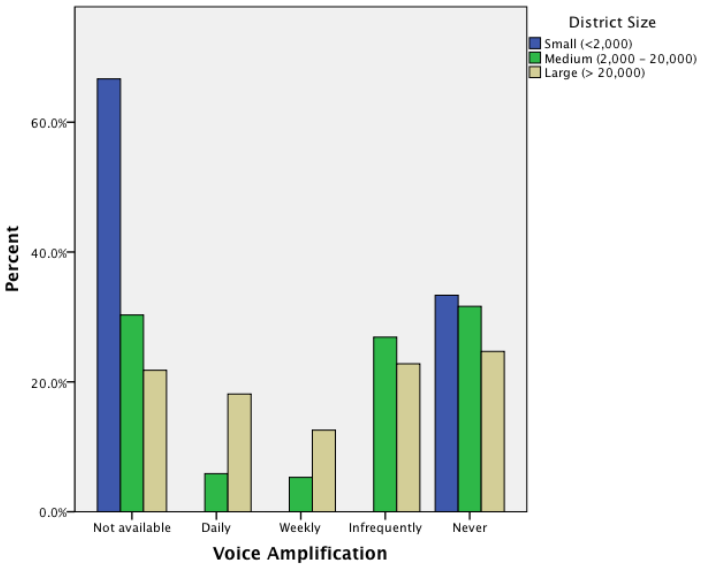
40.0%
20.0%
0.0%
Not available
Daily
Weekly
Infrequently
Never
Clickers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Percent
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20.0%
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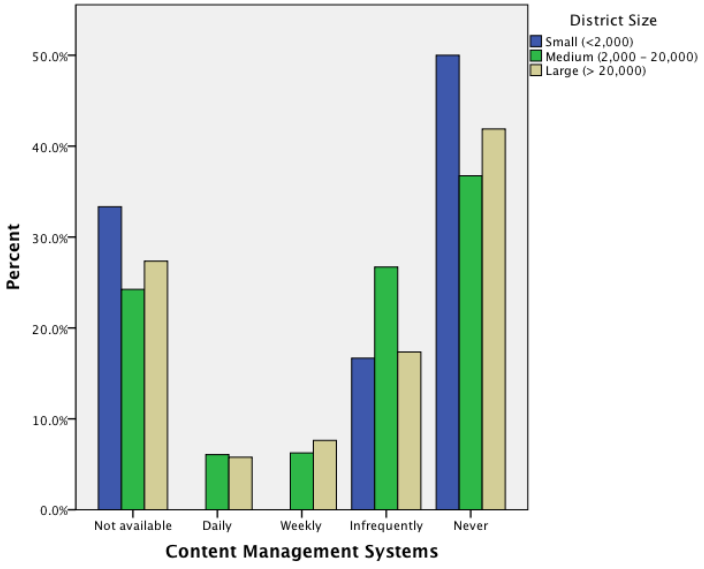
Not available
Daily
Weekly
Infrequently
Never
Voice Amplification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Percent
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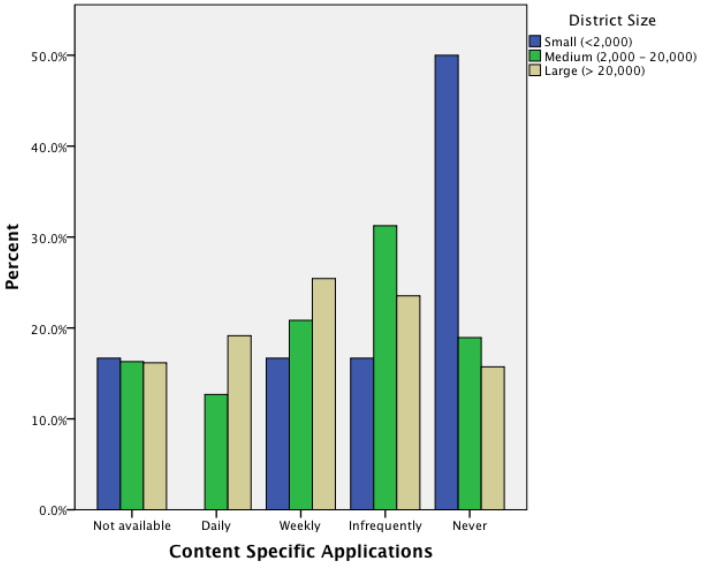
Not available
Daily
Weekly
Infrequently
Never
Content Management Systems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Percent
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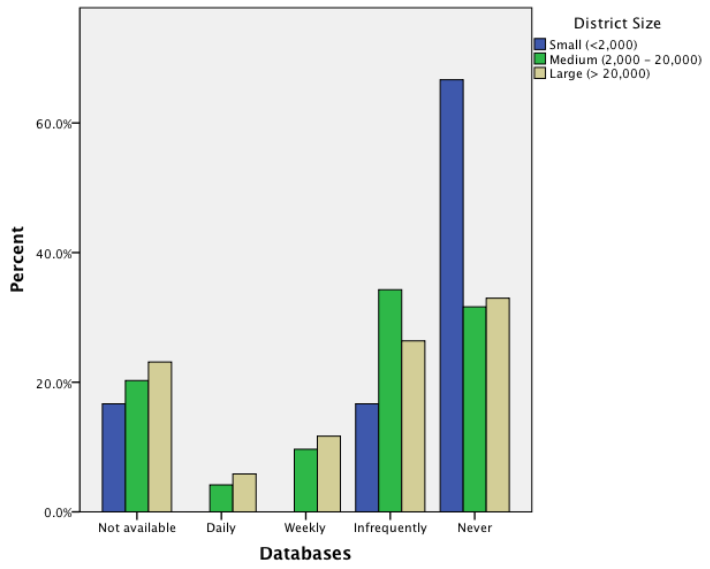
Not available
Daily
Weekly
Infrequently
Never
Content Specific Applications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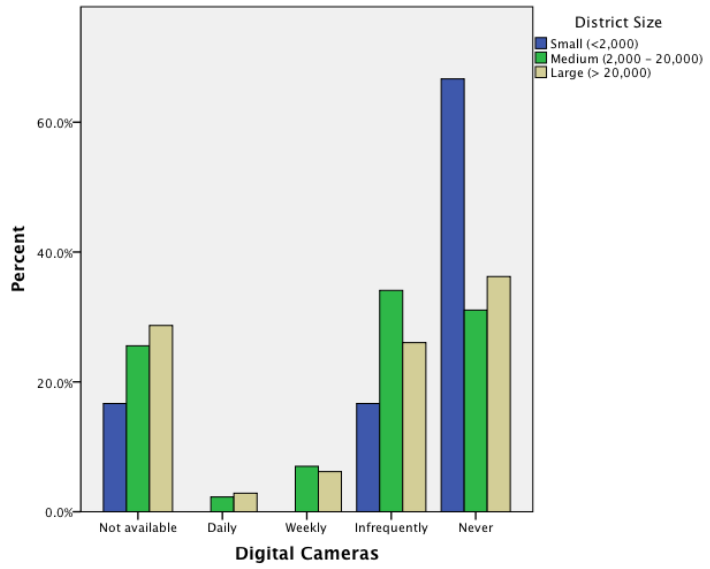
Not available
Daily
Weekly
Infrequently
Never
Databases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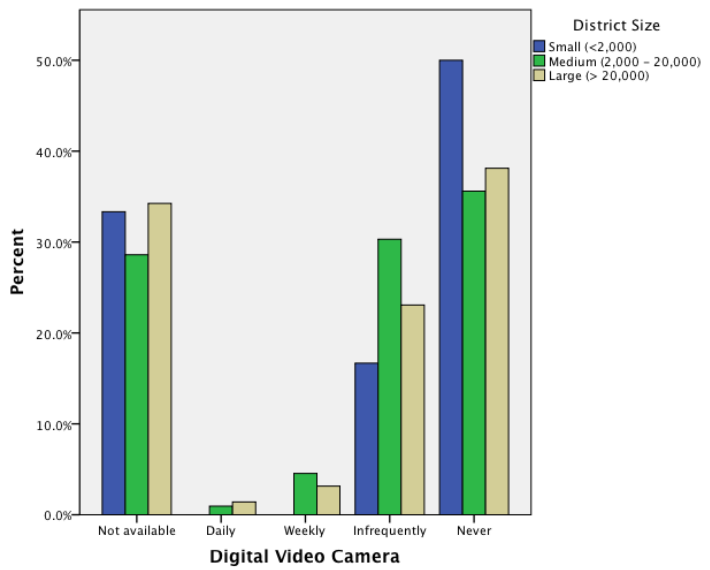
Daily
Weekly
Infrequently
Never
Digital Cameras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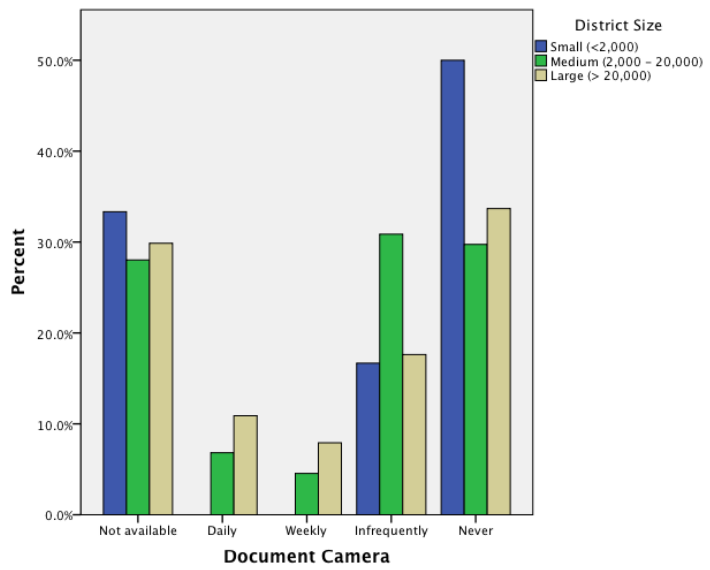
Not available
Daily
Weekly
Infrequently
Never
Digital Video Camera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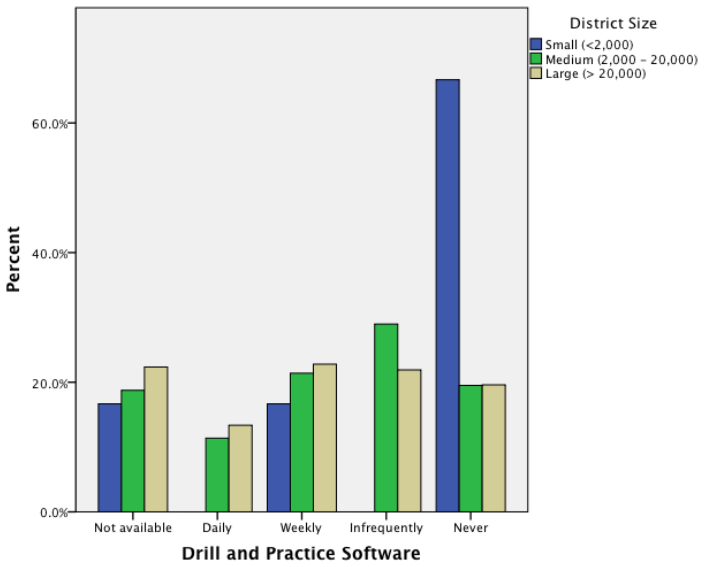
Not available
Daily
Weekly
Infrequently
Never
Document Camera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Percent
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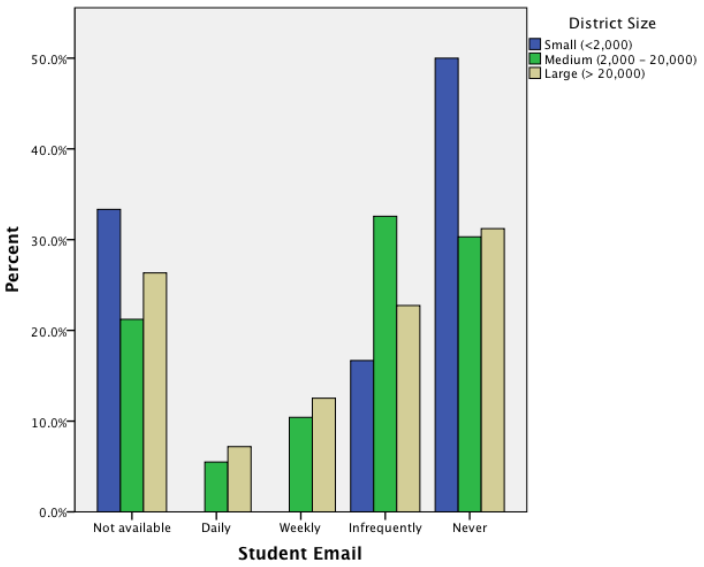
Not available
Daily
Weekly
Infrequently
Never
Drill and Practice Software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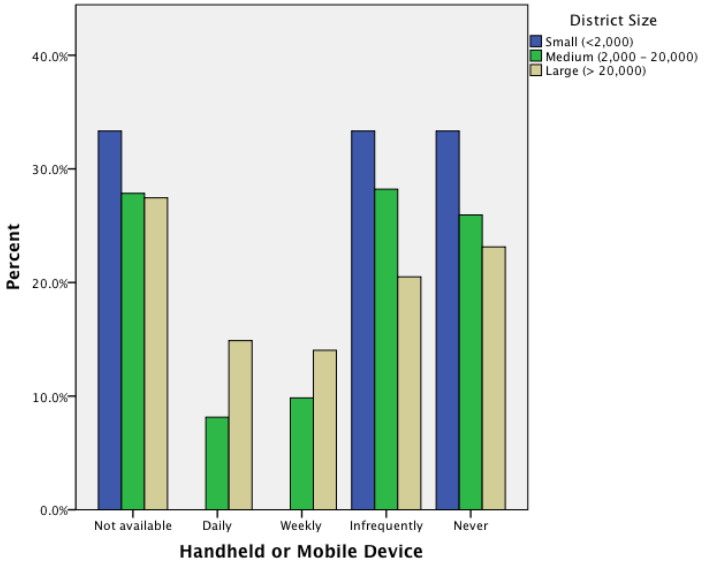
Not available
Daily
Weekly
Infrequently
Never
Student Email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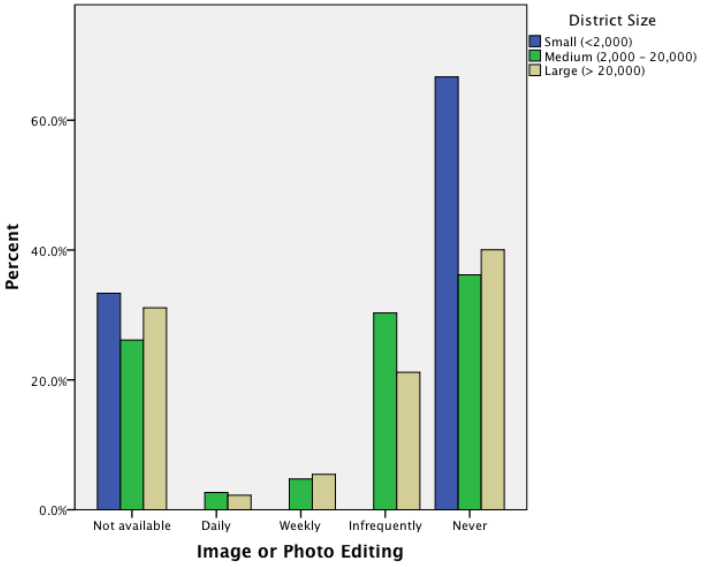
Not available
Daily
Weekly
Infrequently
Never
Handheld or Mobile Device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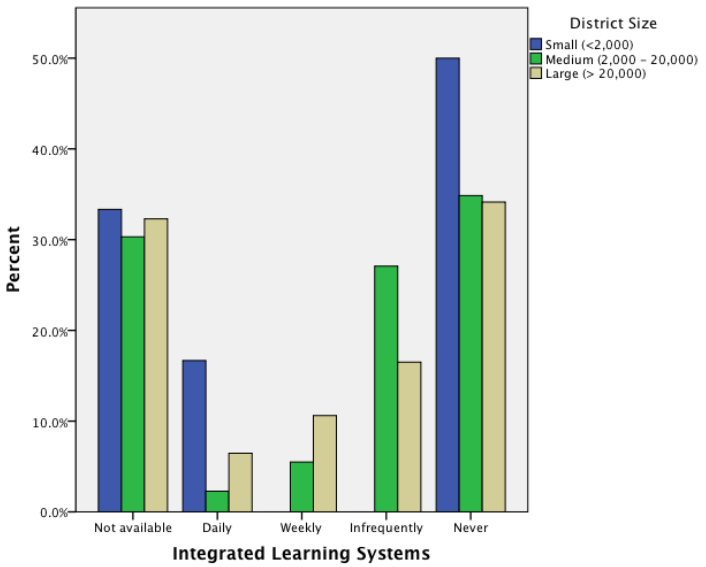
Daily
Weekly
Infrequently
Never
Image or Photo Editing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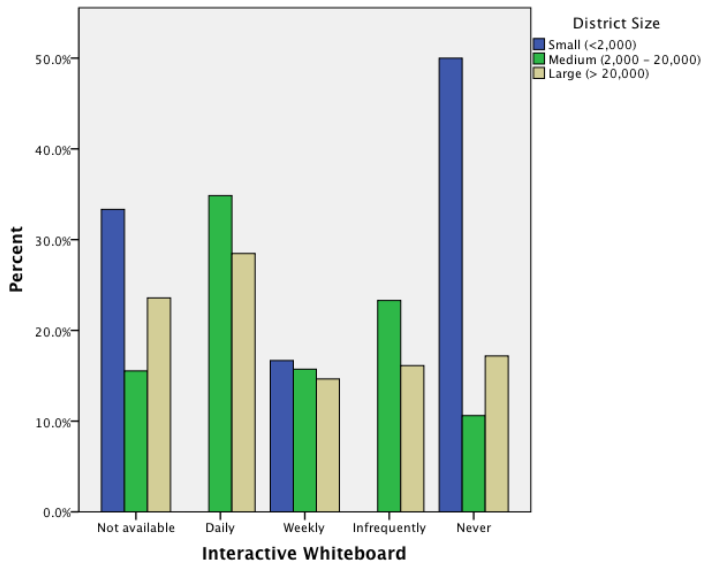
Daily
Weekly
Infrequently
Never
Integrated Learning Systems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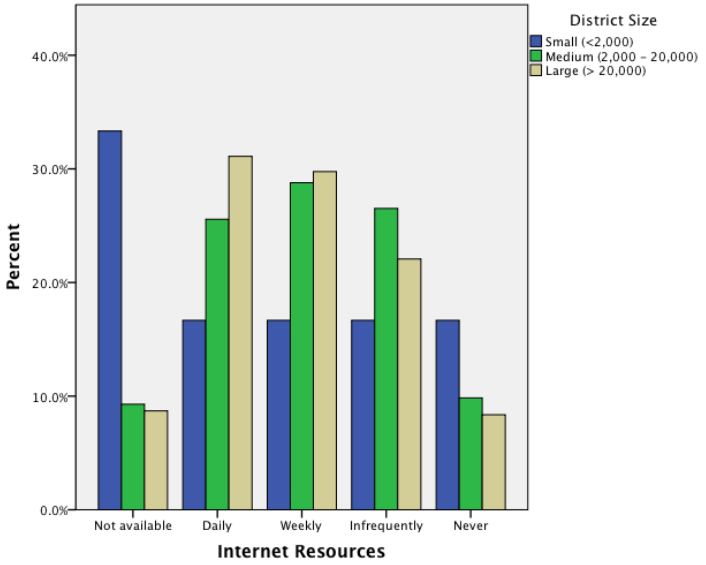
Daily
Weekly
Infrequently
Never
Interactive Whiteboard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Weekly
Infrequently
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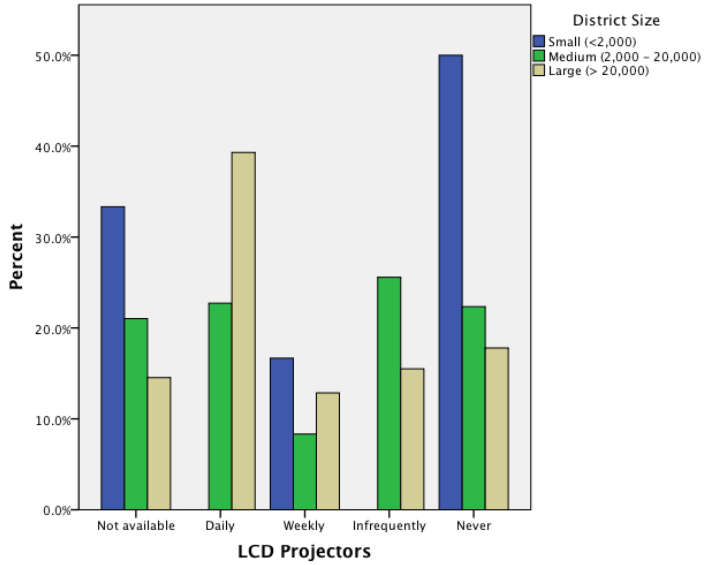
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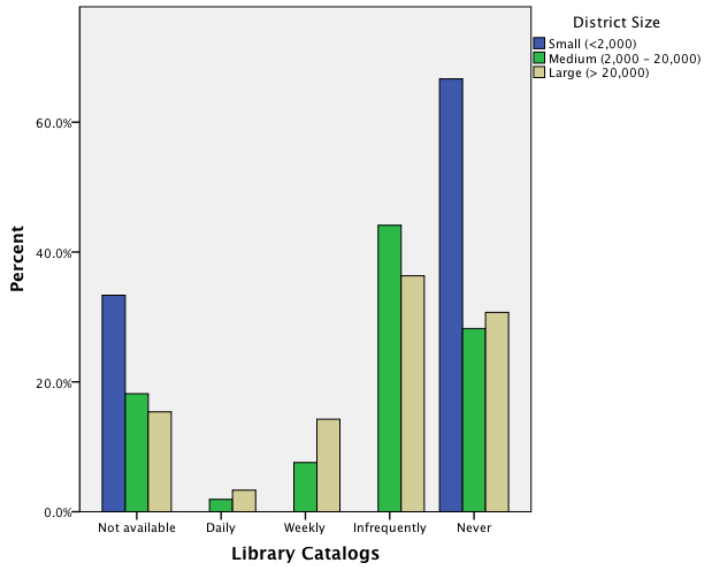
Not available
Daily
Weekly
Infrequently
Never
LCD Projectors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Medium (2,000 - 20,000)
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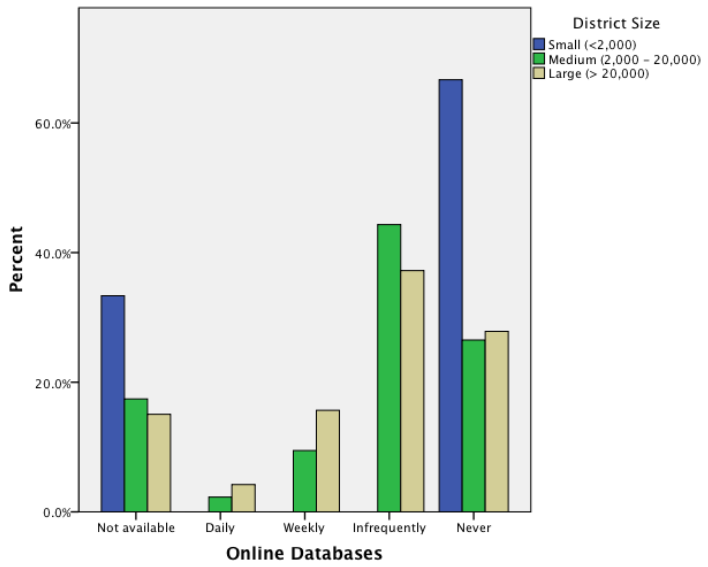
Daily
Weekly
Infrequently
Never
Library Catalogs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Daily
Weekly
Infrequently
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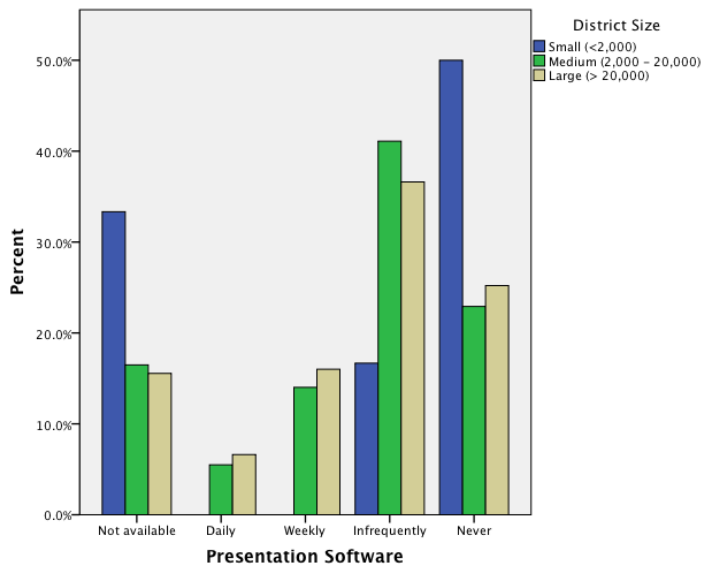
Online Databases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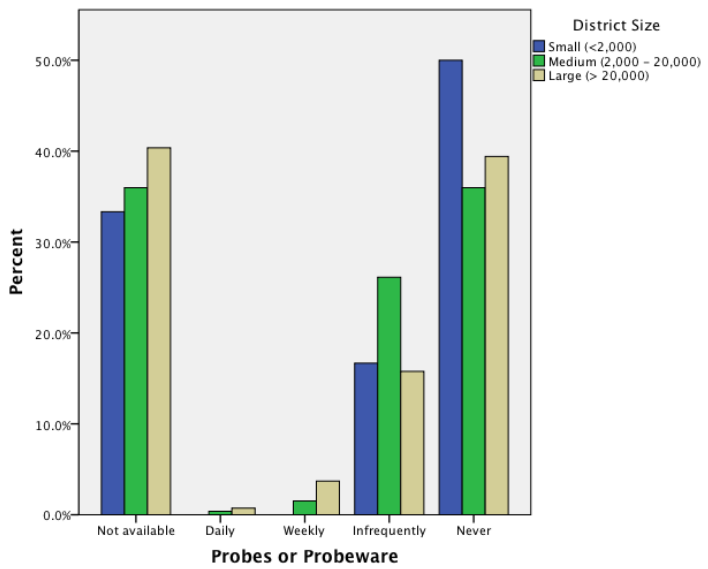
Daily
Weekly
Infrequently
Never
Presentation Software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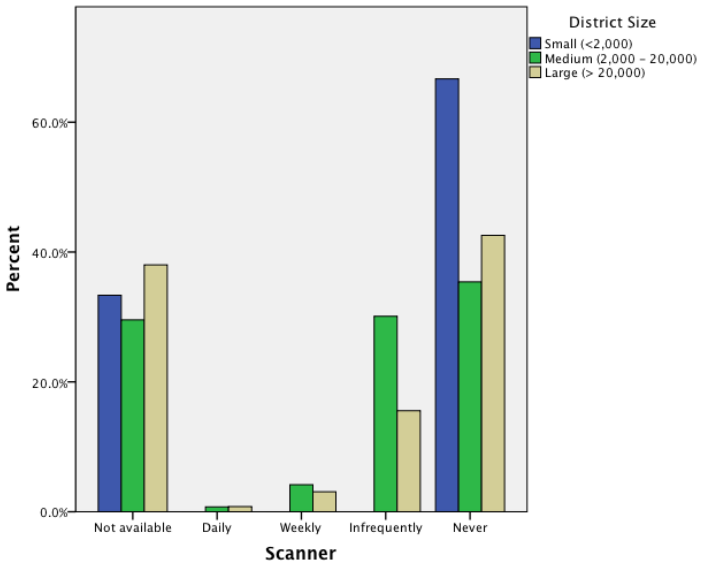
Not available
Daily
Weekly
Infrequently
Never
Probes or Probeware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Daily
Weekly
Infrequently
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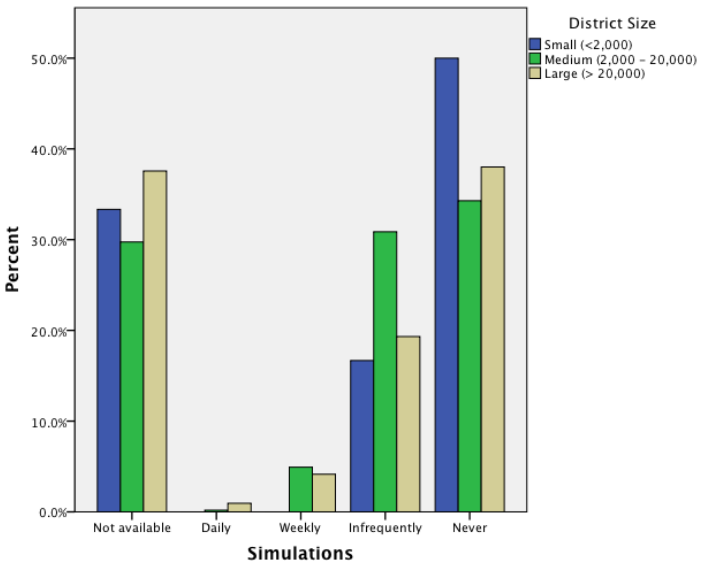
Scanner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Daily
Weekly
Infrequently
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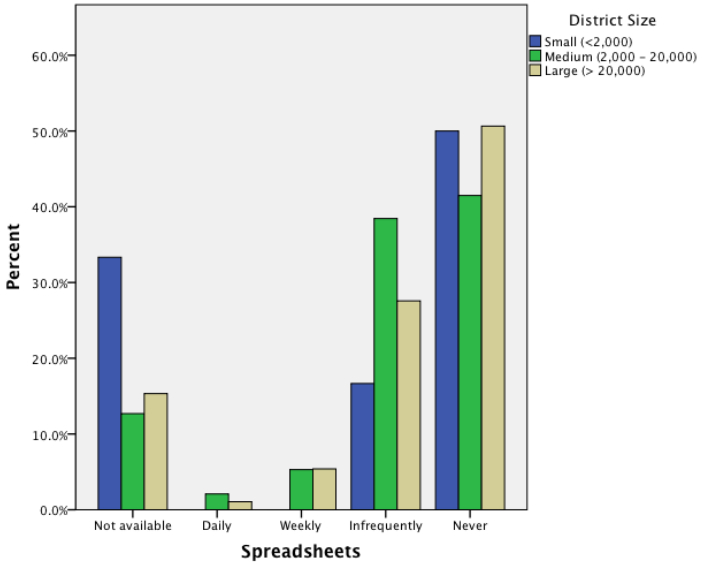
Simulations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Infrequently
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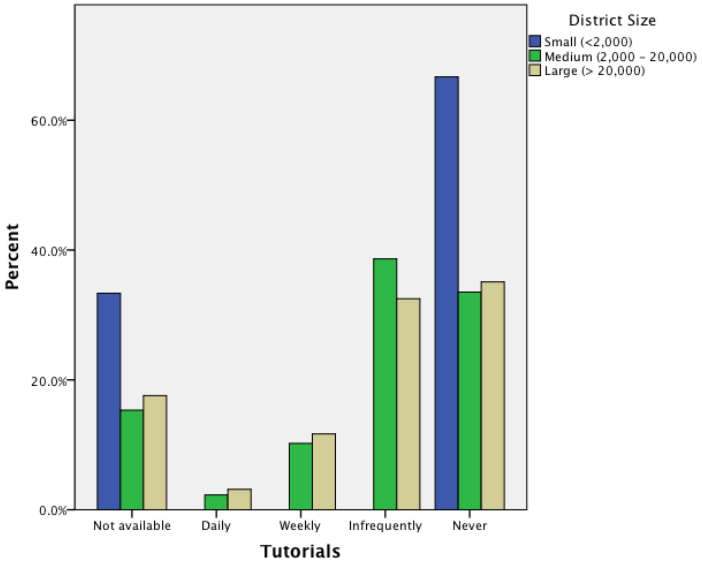
Spreadsheets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Infrequently
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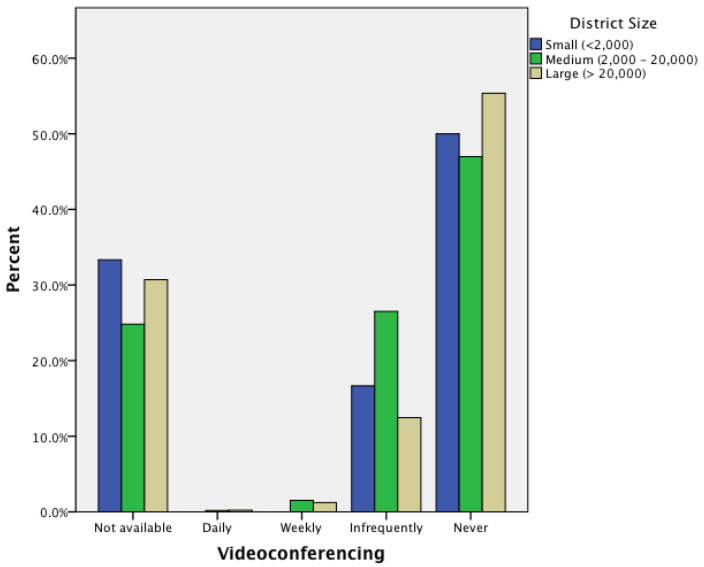
Tutorials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Daily
Weekly
Infrequently
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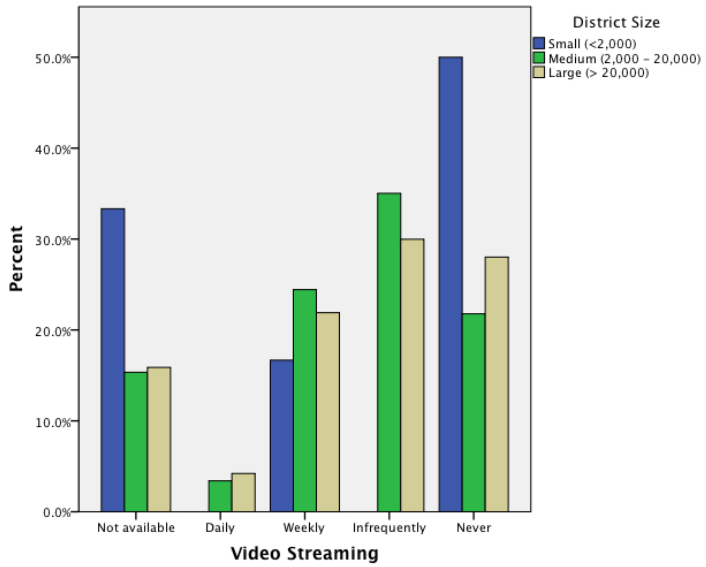
Videoconferencing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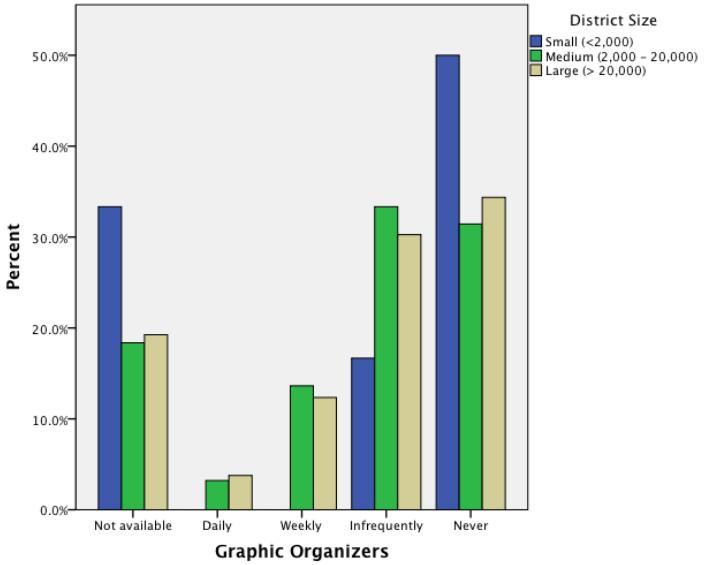
Not available
Daily
Weekly
Infrequently
Never
Video Streaming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Daily
Weekly
Infrequently
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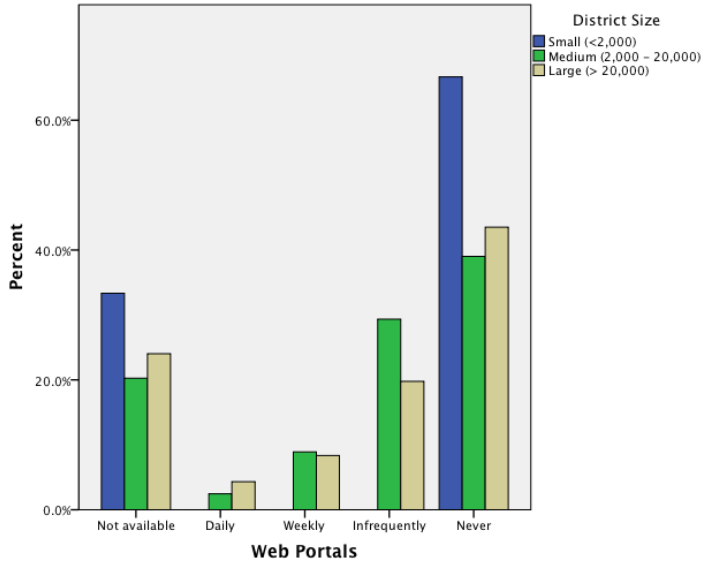
Graphic Organizers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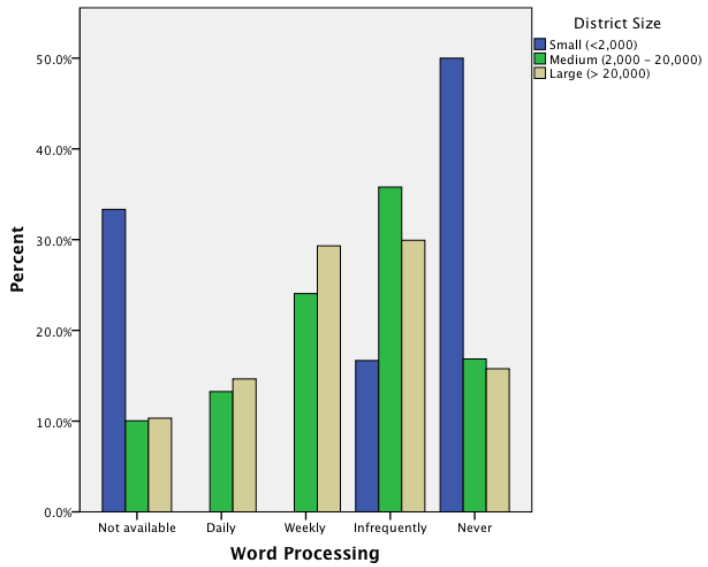
Web Portals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Daily
Weekly
Infrequently
Never
Word Processing