

Digital Inclusion for Migrant Millennials: Improving the ICT Landscape of Yakima Valley Schools

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Abstract

Digital inclusion seeks to bring the benefits of information and communication technologies (ICT) to vulnerable populations such as low-income families, residents of rural communities, seniors, disabled citizens, at-risk youth, immigrants, refugees and people of color. Despite its thriving agricultural industry, the Yakima Valley in Washington State is designated as an economically distressed area with low wages, significant unemployment and high poverty levels. The area's agricultural emphasis attracts a large population of migrant workers who are generally perceived to be information poor, meaning they face major challenges with finding and using greatly needed everyday information. Little research in ICT access for migrant populations exists because differences in language, culture and other factors make migrant workers and their youth a particularly difficult population to study. Using the Yakima Valley as a research site, this work examines current digital inclusion efforts towards migrant youth and how rising workers of the millennial generation can better participate in today's digital economy. This research involves reviewing literature on the information ecosystem of the Yakima Valley, interviewing school district administrators for their insight into the current ICT landscape of their facilities and evaluating current educational technology access strategies within the region. The work provides recommendations aimed at influencing policy and awareness for digital inclusion within the school system.

Keywords: ICT, digital inclusion, information behavior, technology policy, migrant youth, millennial generation

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1 Introduction

The emergence of information and communication technologies (ICT) has transformed today's economy through the diffusion of new tools. Personal computers and the internet improve how modern society interacts, learns and earns a living. However, there are multiple disparities associated with ICT deployment and access. According to Chakraborty & Bosman (2005), factors such as race, education and income contribute as leading causes of those disparities. Groups with higher incomes and better education, particularly Caucasians and Asian Americans, are adopting newer ICTs faster and are connecting more often to the information economy. Fairlee (2004) reports that barriers such as language have been found to explain low rates of computer and internet access among Americans of Latin or Hispanic descent. Community programs that seek to overcome the digital divide promote digital inclusion and foster the ability of individuals and groups to access and use ICTs. Digital inclusion policies aim to level the playing field of technological opportunity for underserved populations (FCC, 2012). Marginalized groups that experience barriers to ICT include low-income families, residents of rural communities, seniors, disabled citizens, at-risk youth, immigrants, refugees and people of color.

2 Literature Review

2.1 Socioeconomic history of the Yakima Valley

The Yakima Valley was created by the flow of a river through the million acres of land in what is now Central Washington State. By the closing of the nineteenth century, large-scale irrigation projects helped local farmers realize the land's potential. The Yakima Valley became the fruit bowl of Washington, producing apples, peaches, pears, cherries and grapes, as well as hops, sugar beets and asparagus (Gamboa, 1981). Despite its thriving agricultural industry, the Yakima Valley is designated as an economically distressed area with low wages, significant unemployment high poverty levels. The area's agricultural emphasis attracts a large population of immigrant Hispanic farm workers. In the Census 2010 questionnaire, 46% of survey respondents in Yakima County of Washington State reported themselves as persons of Hispanic or Latino origin (US Bureau of the Census, 2012). This number is anticipated to be higher if undocumented workers are taken into account.

Unlike areas of the southwestern United States, Mexican settlement in the Yakima Valley is a recent phenomenon. Per Coronado (2005), large-scale Mexican immigration to the valley began during World War II when high demand for agricultural labor led to the enactment of the Bracero Program from 1942 to 1964, bringing more than 35,000 Mexican laborers to Washington. Gamboa (2000) reports that since the Bracero Program ended in 1964, Mexican immigrants continue to find their way to the Yakima Valley to find employment or to unite with family members and friends who settle in the area.

2.2 Migrant youth as infomediaries

Fisher's (2004) work in studying the information behavior of migrant Hispanic farm workers and their families in the Pacific Northwest classify migrant workers as information poor, meaning they face major challenges with finding and using greatly needed everyday information. Migrant workers are defined by the United Nations (1990) as people who work outside of their home country. Face-to-face interaction within personal networks is a highly favored information gathering activity for migrant workers. Secondary sources include radio and television print media, although many factors determine the use of ICT among immigrant populations. Migrant workers are more likely to trust in-person communication from their social networks in environments like church, school and the workplace. However, the undocumented status of some migrant families adds a complex layer of difficulty for deciding with whom and how they share information.

Chu (1999) examines how children of these migrant workers play a significant role in facilitating the literacy interactions of their immigrant parents, relatives and friends. These children serve as infomediaries, or information intermediaries, and are called upon to perform adult responsibilities for their parents ranging from conversational interpretation, filling out legal forms and translating information. Children who serve as infomediaries are an asset to their families, but these expectations are imposed on them because of their need to balance two different cultural environments: that of their ethnic community and that of American society. Dependence on English speaking children eternalizes a damaging pattern among immigrant families as the cycle of children translators perpetuates the isolated life of immigrants. Such differences in language, culture and other factors make migrant youth of the millennial generation — those born in or after 1980 (Ng, Schweitzer and Lyons, 2010)—a challenging population to study.

2.3 People, places and partnerships of ESD 105

Administrators of Educational School District (ESD) 105 in the Yakima Valley developed a migrant education program to assist local school districts that work with a large number of migrant youth (Harding & Sykes, 1994). The ESD 105 Migrant Education Regional Office (MERO) serves approximately 16,400 migrant students who attend the 25 public school districts and 23 state-approved private and tribal schools in Washington State. MERO works with school districts and teachers to implement federal and state

programs that support migrant student learning and parent involvement. With support from federal Title 1 funds, MERO serves in liaison activities between the U.S. Department of Education’s Migrant Education Program, the Office of State Superintendent of Public Instruction, Migrant and Bilingual Education, and the schools, communities and parents that work directly with students.

Wapato School District (WSD) is a public school district located in Wapato, Washington. In the 2011-2012 school year, the district enrolled approximately 3,400 students. The student body is culturally diverse: 72% of the students are Hispanic and 19.4% are American Indian. Nearly one in five students are from the Yakama Nation. Roughly 29% of the students at WSD are reportedly identified as migrant and 100% of the students qualified for free or reduced meals (Figure 1). WSD is one of 25 other school districts that fall within the jurisdiction of ESD 105 and partners with MERO to share migrant-specific resources for its students.

- How does ESD 105 see technology fit in its mission/vision statement? Is ESD 105 engaged in any digital inclusion programs or initiatives?
- How does ESD 105 leverage existing investments in its IT infrastructure? What is needed in technology capacity/skill building to keep moving diverse participation forward that supports ESD 105’s work?
- Where are the strengths, weaknesses, opportunities and threats in your information technology management department? Are there any gaps? Who is left out and at risk of being left behind in accessing information resources?
- What is the source of funding for your technology services? How are libraries and computer labs furnished/maintained? Do you feel that those facilities are over/under utilized? What digital technologies are currently available for students, faculty and staff?
- What are ESD 105’s measures of success (benchmarks) for digital inclusion? Who oversees all IT operations? How are technology strategies evaluated?
- Do you have any experience working in school districts that are predominantly white? How does that compare with your experiences interacting with the diverse composition of students, staff and faculty at ESD 105?
- What is your experience working in a school district that serves a significant migrant population? Do any interesting stories come to mind from your involvement with this community?

Figure 1: Interview questions

2010 Enrollment Statistics		
Enrollment	Total	Percentage
October 2010 Student Count	3,376	
May 2011 Student Count	3,291	
Gender (October 2010)		
Male	1,709	50.6%
Female	1,667	49.4%
Race/Ethnicity (October 2010)		
American Indian/Alaskan Native	665	19.7%
Asian	52	1.5%
Asian/Pacific Islander	52	1.5%
Black	4	0.1%
Hispanic	2,428	71.9%
White	143	4.2%
Two or More Races	83	2.5%

Special Programs		
Free or Reduced-Price Meals (May 2011)	3,291	100.0%
Special Education (May 2011)	417	12.7%
Transitional Bilingual (May 2011)	824	25.0%
Migrant (May 2011)	954	29.0%
Section 504 (May 2011)	13	0.4%
Foster Care (May 2011)	0	0.0%

Table 1: Student demographics of Wapato School District

Source: Office of Superintendent of Public Instruction Washington State Report Card

3 Methodology

This research involved scanning literature on information behavior for migrant youth in the Yakima Valley, interviewing relevant school district administrators of ESD 105, assessing metrics of success and evaluating current technology access strategies within the region. The literature review suggested that the information behavior of various groups of immigrant youth varied depending on their enrollment status. Specifically, this research focuses on migrant youth currently enrolled in ESD 105 schools.

Five administrators within ESD 105 are interviewed for their insight into the high level analysis of decision making in their respective IT departments. Respondents included the Director of the Migrant Education Regional Office, the Director of the Educational Technology Support Center and the Director of the Yakima Valley Library. The Director of Technology and Assessment from Wapato School District was also interviewed to gain context into a particular school district of ESD 105. Although K-12 youth were the targeted end users of the technology provided by the school district, school administrators could provide context to budgetary policies and technical resource constraints where students cannot.

Semi-structured interviews allow stakeholders the freedom to express their views in their own terms (Courage and Baxter, 2004). Each respondent was asked a set of predetermined questions relating to strategies that examine what technologies are available for migrant youth, how often key performance indicators of success are evaluated and how current technology access strategies are assessed. All responses were recorded, transcribed and coded to transform raw data into a standardized format for interpreting recurrent concepts and identifying emergent themes (Pickard, 2007). Additional data guiding the analysis of the research draw from the Washington Migrant Education Program Service Delivery Plan, which documents the substantiated needs of migrant students in the state, sets performance targets for meeting their needs and provides the general strategy for local response to their needs.

4 Findings and Discussion

4.1 Technology usage and infrastructure

The Federal Communication Commission's (FCC) E-Rate Program helps provide affordable access to telecommunications services for eligible schools and libraries, particularly those in rural and economically disadvantaged areas. E-Rate provides discounts on four key areas of service: telecommunications services, internet access, internal connections and basic maintenance of internal connections. Wapato School District (WSD) receives approximately \$3 million dollars of E-Rate money that fund approximately 90% of its IT services. One of the limitations of the E-Rate Program is that internet access cannot be accessed outside of the school district. To ensure compliance with E-Rate requirements, WSD administration completes monthly technology audits to assess the usage of its end-user equipment like computers and telephones. The district utilizes its collected bandwidth capacities to shape network usage and provides access to network applications that integrate technology into the classroom. Additionally, WSD's administrators

complete over 100 walks a month in classrooms and computer labs to ensure high quality of instructional technology in each campus facility. A high quality Wi-Fi network is present within the district; many instructors allow students to bring their own devices (i.e. laptops, iPads) and use them during class.

ESD 105 is affiliated with several educational initiatives that offer high-quality internet resources across many disciplines. Thinkfinity is the Verizon Foundation's online professional learning community that provides free access to digital resources for over 60,000 educators in curriculum enhancement. In this service, educators connect and collaborate through themed groups, blogs and discussions to share resources and best practices that support 21st century teaching and learning. Thinkfinity and the Educational Technology Support Center at ESD 105 have agreed to work together to deliver Thinkfinity training to educators in Washington.

The Washington Learning Source (WLS) is another statewide educational technology resource developed by ESDs of Washington State. Its mission is to provide a place for districts to choose products and services that meet their needs and create economic efficiencies through ESD collaboration and a regionally supported delivery model. For over 30 years, Washington ESDs provides a vast array of services to school districts for the purpose of assuring equal educational opportunities for quality education and lifelong learning. WLS is an expansion of the ETSC purchasing program and serves as a primary source to access a variety of resources available in enhancing education and teaching in the state of Washington.

All educational technology plans within the Yakima Valley center around developing the necessary skills of its students to be productive members of society. Research continues to affirm the positive impact that effective instruction coupled with a technology-rich learning environment can have on student performance (West, 2011). Computers help students improve their performance on basic skills tests and are powerful tools for problem solving, conceptual development and critical thinking. Technology integration has demonstrated that students learn quickly and with greater retention when learning with the aid of computers. Adequate teacher training is an integral element of successful learning programs based or assisted by technology.

4.2 Technology training from committed staff

The Educational Technology Support Center (ETSC) of ESD 105 works with the region's schools to provide leadership and assistance in using technology to boost student success. ETSC helps teachers, administrators and office staff use technology for program planning, classroom integration, program assessment, research and grant writing. In addition to offering consultation on internet safety, legal and ethical technology use in K-12 education, administrators meet with ETSC to develop technology plans for district initiatives.

Providing professional development workshops for instructors is a priority for ETSC. At no cost, any teacher or staff member within ESD 105 can engage in 10 days of training in technology integration and lesson design. Trainings from ETSC range from various domains of technical skills, including learning how to design graphics with Adobe Creative Suite programs, conducting a videoconference call and developing a website portal for classroom resources. All instructors are required to attend professional development seminars on a yearly basis to maintain their proficiency with current and upcoming technology tools.

Various technology-focused programs allow for the regular training of teachers and staff. For instance, the Peer Coaching Program aims to increase the capacity within teachers of Central Washington to use educational technology in the classroom effectively. The ETSC at ESD 105 has been training and supporting peer coaches since 2003. Already 244 instructors have trained through this program. Peer coaching allows two or more teachers to work together, one coaching the other, to improve individual instructional practice. As colleagues in the same school, they share instructional experiences through observing and teaching in each other's classrooms. Peer coaching works best between beginning educators

who have at least some experience with technology integration and experienced educators who are ready to coach a colleague with 21st century classroom technology.

Extra resource development such as the Prepare to Integrate Learning Opportunities with Technology (PILOT) tool is also supported by the ETSC. This online staff self-assessment tool determines an educator's level of technology proficiency and classroom application. Based upon the results of the assessment, PILOT software allows educators to view and select learning opportunities throughout the state to advance their proficiency level. PILOT also develops a learning community for educators to meet and participate in statewide projects and can function a tool for districts to use within their staff to organize professional development efforts.

ESD 105 evaluates how educators integrate technology in their everyday teaching through a tiered model of technology use in classrooms. At the first tier, the teacher uses technology to accomplish a specific task. Specifically, the instructor supports the learning experience by finding instructional resources on the internet, communicating quickly with email, posting grades and supplying other relevant information online for parents. At the second tier, the teacher involves facilitating a large group of learning activities and encourages student use of technology. In this way, the instructor enhances the learning experience by delivering visual presentations, conducting one-computer classroom lessons and collecting student assignments online. At the third tier, the teacher involves student use of technology in individualized learning activities. In doing so, the instructor personalizes the learning experience by authoring work online, managing online discussions and inventing products through programming. This model is developed by ETSC Directors in Washington State, approved by the Office of Superintendent of Public Instruction and included in ESD 105's Technology Planning support documents (Fisher, 2013).

4.3 Student technology usage outside of schools

Other than school district computer labs, students in the Yakima Valley also have access to various branches of the Yakima Valley Libraries (YVL). Supported through local property taxes, the rural county library district comprises of a central library and 16 community libraries located throughout Yakima County. All towns or cities are either annexed to or contracted with Yakima Valley Libraries for library services. Annexed cities include Harrah, Moxee, Selah, Yakima (Yakima Central, Southeast and West Valley), Sunnyside, Toppenish, Wapato and Zillah. Contracting cities include Mabton, Granger, Tieton and Naches. Rural county locations include Buena, Terrace Heights and White Swan. YVL currently serves over 240,000 people in Yakima County and aims to support lifelong learning by providing free, open and full access to information. Migrant youth who visit YVL commonly seek the following information services: education and career preparation, health and wellness, English as a second language and legal consultation. The central branch of YVL is equipped with a lab of over 150 computers and grants wireless internet access to all patrons. With the majority of its staff bilingually proficient, YVL librarians hardly experience difficulty communicating with migrant youth who just moved to the Yakima Valley with little or no English speaking skills.

One of the most noticeable technology gaps for migrant students in the Yakima Valley is the lack of internet access outside of school facilities. Although branches of YVL throughout the region offer access to ICTs, various branches are located far from school premises. Students who reside in low-income public housing lack transportation to these libraries, which have been a commonly expressed concern among parents and administrators. Additionally, although the central branch of YVL is equipped with over 150 computers, other sites like the branch in Wapato are limited to 5-10 computers at any given time for general public use. The scarcity of public computers and limited connectivity outside school zones negatively impacts how these students connect to online resources to complete class assignments. Youth from low-income families are especially at risk because they are less likely able to afford personal computers, essential software or even an internet service subscription. High school students who are seeking jobs or applying for

college are also restricted to completing these online applications within school hours if they do not have the necessary technology available in their homes. For migrant students, accessing extra computer time for educational use before or after school can be challenging if their schedules need to accommodate for employment or family caregiving responsibilities.

The lack of concrete data on what is available in student homes is an underlying problem in realizing digital inclusion for ESD 105 administrators. This is especially the case for Wapato School District. Information about in-home technology usage is not surveyed from students. Migrant educators and administrators are not fully aware of the computer fluency levels of their students. Without collecting self-reported data on personal technology inventories, a holistic picture of the information ecosystem within K-12 education cannot be painted for the Yakima Valley. If this unknown data was made available, teachers can better tailor their curriculum to compliment student strengths or adjust lessons accordingly to various technology competency levels within the classroom.

4.4 Addressing the achievement gap

Migrant youth face numerous challenges that prevent them from succeeding in education (Figure 3). Most common among these challenges is the susceptibility of migrant youth missing school when their families move from one work site to another. Furthermore, millennial workers are more pressured to work longer hours on the job instead of studying for school. Frequent moves and recurrent absences mean that migrant students often fall behind academically. However, technology is a valuable tool that can enhance learning and enrich the education opportunities for migrant students. Distance learning programs that move with the migrant students and allow them the capacity to access their coursework from anywhere they live could provide the greatest potential for academic achievement among migrant populations.

The Migrant Education Regional Office provides technical assistance to federal project directors and school administrators for the implementation of their Migrant Service Delivery Plan. In Washington State, migrant students are held to the same challenging academic performance targets and indicators that all students are expected to meet under the federal Adequate Yearly Progress (AYP) guidelines. State-level performance data for migrant students is used for policy development and targets program interventions that assure satisfactory academic performance. MERO administrators believe that engaging parents in the education of their children is key to achieving student academic success. MERO's parent services assist school communities in the implementation of programs designed to actively involve parents as partners in the education of their children in the home, school and community. MERO also provides community trainings for migrant parents who want to get more involved with their children's education. These trainings clarify misperceptions that teachers and migrant parents have of one another, discuss barriers and solutions to parent involvement, and walk through the process of establishing parent advisory committees within school districts. Overall, MERO's proactive efforts in engaging and empowering migrant parents enhance the learning success of their students.

Aside from MERO, various nonprofit organizations in the area contribute to transforming the lives of young people from rural school districts in education. For instance, the Northwest Learning and Achievement Group (NLA) located in Wapato has after school programs that boost academic achievement and increase the numbers of students in these low-income areas who are applying for postsecondary education. With the help of NLA, thousands of Hispanic and Native American learners throughout the region are challenging conventional wisdom by demonstrating that they can exceed expectations and overcome the traditional barriers to success. NLA receives funding from the Federal Department of Education through the Department of Community Technology Opportunities Program, the Washington State Arts Commission and the Gates Foundation. Furnished with a computer lab and staffed with educational advisors, the NLA provides educational resources to schools, colleges and community organizations so that students from low-income families can reap the benefits of higher education.

5 Recommendations

The analysis of data collected from interviews with school district administrators illustrate how migrant students are a significantly large population group that is at risk of being left behind in accessing ICT resources. Proposed below are several strategies that can be investigated and evaluated further to improve the educational opportunities of migrant students.

5.1 Recommendation 1: Increase access to distance learning alternatives.

- Problem: Migrant youth miss school when their families move from one work site to another, causing them to fall behind in the achievement gap compared to their non-migrant peers. (Refer to Figure 2 for a topical list of seven common concerns for migrant students.)
- Strategy: Increase student access to online programs to mitigate educational disruptions that impact grade promotion. Offer flexible courses of study that help migrant students accelerate course completion or finish incomplete courses. Refer migrant students to online courses and other distance learning opportunities for credit accrual. Provide additional instructional time in the summer or evening.
- Assessment: Measure the number of participating students and courses completed. Evaluate if supplemental technology instruction is cost effective. Utilize technology and other tools to promote skill building in the target content areas.

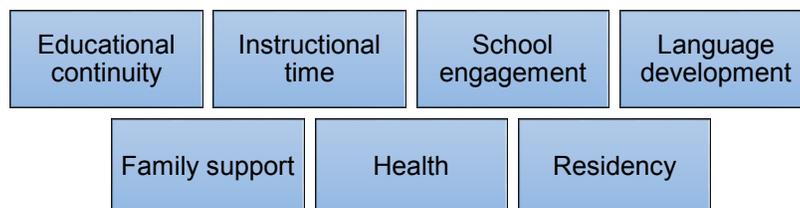


Figure 2: Seven areas of concern for the migrant student

Source: Educational School District 105

5.2 Recommendation 2: Prioritize funding for ancillary migrant resources.

- Problem: Non-academic services are the lowest of the four listed priorities in the Washington State Migrant Education Program (Figure 3), which include advocacy and outreach activities, professional development, family literacy, the integration of information technology into educational and related programs, and the transition of secondary school students to postsecondary education or employment.
- Strategy: Allocate more funding from various grant sources (School Improvement Grant, Title Funds, E-Rate, etc.) to non-academic services. Lobby or sponsor legislation that advocates non-academic services as a higher priority item in “Title I, Part C, Migrant Education Statutory Requirements: Section 1306(a) of the Elementary and Secondary Education Act.”
- Assessment: Measure the change (increase or decrease) of graduation and retention rates of migrant students.

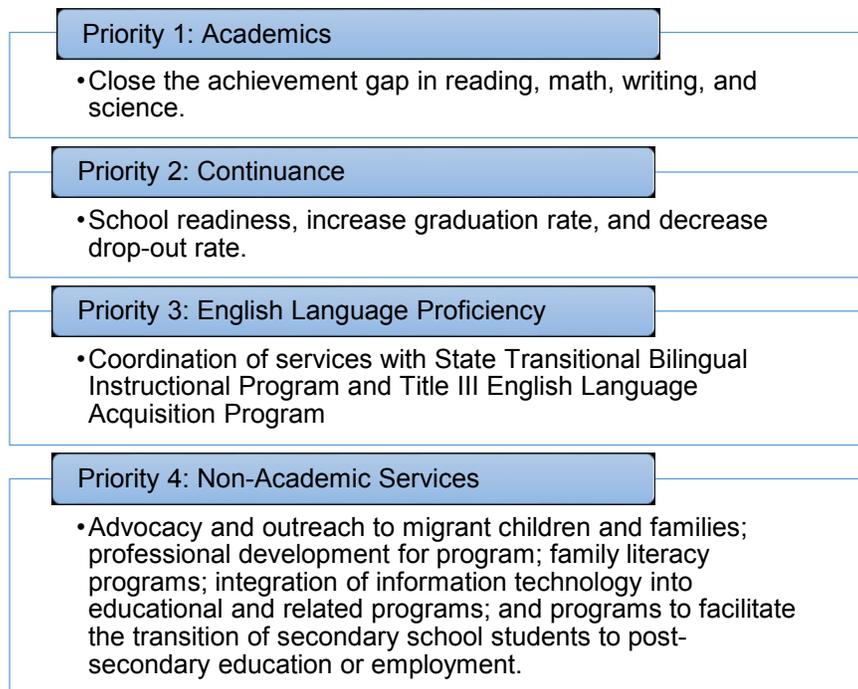


Figure 3: Washington State Migrant Education Program priorities

Source: Washington State Migrant Education Program

5.3 Recommendation 3: Run a pilot technology indicators survey.

- Problem: School district administrators and faculty do not have any concrete data on the IT resources available in student homes.
- Strategy: Conduct an annual technology inventory survey at the beginning of each academic year as a requirement for students to enroll in classes. Collect data on residential use of cable television, broadband adoption and uses (including health, work, education, finance and civic engagement), and an inventory on personal electronic devices. The survey should be available in both Spanish and English languages. Inform low-income families about low-cost options available for high speed internet. Provide resources on purchasing computers and teach students how to maintain personal computers safely and securely.
- Assessment: The data will be compiled and analyzed the by school district's Director of Technology to identify significant gaps and barriers in technology access and use. This information can provide additional insight into the holistic IT landscape of student homes and inform future budgetary decisions that involve IT infrastructure investment.

6 Conclusion

Access to ICTs improves quality of life and empowers smaller communities driven by common identities, ideologies and interests. ICTs now have an impact on how migrants perceive, negotiate and interact in their environments. Without access to global information and services, migrant communities will continue to experience economic and social attrition when connectivity with a wider world remains absent. Technology integration has demonstrated that students learn quickly and with greater retention when learning with the aid of computers.

Within Educational School District 105, administrators complete over 100 walks a month in classroom and computer labs to ensure high quality of instructional technology in each campus facility.

Additionally, compulsory technology-focused professional development programs allow for ESD 105 staff and teachers to stay up to date with the latest technology in educational instruction. Aside from school facilities, migrant students in the Yakima Valley have access to regional libraries and community centers. However, unlike school district computer labs, computing resources in these spaces are not as adequately furnished or updated with educationally relevant software.

School districts with prominent migrant populations should consider increasing access to distance learning alternatives to mitigate educational disruptions as a result of migrant students missing school when their families move from one work site to another. Funding for ancillary migrant resources should be prioritized higher in Washington Migrant Education Program's Service Delivery Plan because these auxiliary efforts directly impact the motivation of migrant parents to transition their children to pursue postsecondary education or employment. Piloting a technology indicators survey will provide migrant educators and administrators the missing information they need to complement technology in their future curriculum design and to inform long-term IT infrastructure investments. These recommendations have the potential to build more digitally inclusive learning communities for similarly underserved areas that are densely populated with millennial migrant workers.

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