ACCESSIBLE TECHNOLOGY EVALUATION FOR:

OLYMPIC COLLEGE

MARCH-APRIL 2014

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UNIVERSITY OF WASHINGTON, UW INFORMATION TECHNOLOGY
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INTRODUCTION

In the winter of 2013 I was approached by Karen Fusco, Access Services Director, to conduct an assessment of assistive and accessible technology at the Olympic College. Additional goals included assessment of the accessibility of web-based and electronic resources provided to students, faculty and staff. This is, as far as I’m aware, the first time such an evaluation has been performed. The goal of this assessment is to get a sense of the state of assistive technology (AT) provision and IT accessibility at the Olympic campus at the present time and provide suggestions for improvement as well as note areas of good practice. The in-person site visit was performed April 10-11, 2014.

Recommendations and comments made in this report are based on observations, discussions and interviews performed during the site visit. Additionally, web pages and campus resources that are hosted online have been evaluated. I met with staff from Information Technology (IT), Human Resources, the Library, Access Services (AS), Distance Learning, Registration & Records, Student Services, Business Services, Instruction, and Assessment & Testing Services. I was also able to interview two current Olympic students. Campus tours provided views of computing facilities at the Adaptive Lab, within Information Technology, selected classrooms, and the campus library. Additionally, I researched resources and usability/accessibility of select web pages provided at the main University web site during the months of March through May, 2014.

LEGAL REQUIREMENTS

Most of the individuals interviewed during this visit understand that Olympic College has a legal obligation to provide access to resources and programs for all students, including students with disabilities. There are also requirements to provide accommodations for disabled employees, both faculty and staff. The extent of accommodations and their effectiveness, and whether they’re current, are the main goals of this evaluation. College students use an impressive array of computers, software and web content in pursuit of their education. Qualified students with disabilities are guaranteed access to the same services and programs that any student may need to use. This of course includes campus computing facilities and services. It also includes access to academic materials, whether sourced via traditional print or via online electronic materials.

By providing mandated accommodations in this area, institutions and the people who live, study and work there often reap unintended benefits that positively affect more than the intended recipients of disability-related modifications or accommodations. For example, providing an automatic door opener not only makes it possible for those with a mobility impairment to enter a building, it also eases access for those who are temporarily limited, such
as delivery persons pushing a hand truck or for someone carrying an armload load of books. By creating and maintaining accessible web pages, developers are often gratified to discover that a wider audience of non-traditional web users, such as those using tablets or smart phones, can access more pages with less need to provide custom content for different platforms.

Documentation for Access Services ("Services for Students with Disabilities") refers to legal requirements at the federal level. State or institutional policy with respect to accessibility should also be referenced more fully here, and also available on relevant web pages. The current AS web page can provide improved utility, such as electronic versions of necessary forms, links to potential AT training materials, and examples of alternate text solutions.

**SERVICE MODEL**

There is a commitment to serving the needs of students with disabilities at Olympic College. Most staff members interviewed recognize the legal and ethical obligations in pursuit of this goal. This was also reflected in student interviews, where the two students contacted indicated an overall favorable impression of their Olympic experience with respect to accommodations received. The dedication of faculty and staff in making time for interviews on relatively short notice was clearly demonstrated. However, there is room for improvement.

There are two common models of service provision for assistive technology (AT) in the higher education environment. The **IT-based model** is one approach. Primary support, maintenance, and acquisition of assistive technology is performed by staff in the IT department. In some cases user training is housed in IT as well. The benefit of this model assures that technology used by students with disabilities matches technology used by all students throughout the institution. AT-enhanced systems are located in the same facilities as other systems. At some institutions AT is installed on nearly all publicly available systems, meaning students with disabilities do not have to travel to unique locations or workstations. Upgrades and routine maintenance occur in-step with all supported computer systems. Providing AT software via servers to all systems is much more likely to happen with this model. The drawback of this model is that it’s an additional department for students with disabilities to communicate with as far as training and support. Due to the perceived departmental separation, students may not make the additional effort to pursue training or discover all possible options for computer accommodations.

The **DS model** houses primary support for AT in the disability services office, usually within student services. Olympic College uses this approach. This model appears to capture the notice of more students than the IT-based approach, and personalized support for those students has a greater chance of occurring. Students with disabilities are not required to meet with an additional department. On the downside, it is not unusual for equipment and software
provided within the DS approach to lag behind that provided by Information Technology. Funding for relevant AT hardware, software and workstations is often more difficult to obtain within DS budgets, not to speak of the staff required to install, maintain and train. Computer systems within this model are often located in separate facilities, leading to segregation of disabled students from their peers.

Both service models have their strengths and weaknesses; a much more rare approach shares responsibility between IT services and student services, with the person in the primary management position reporting to both units. Due to the complexity and challenges of this reporting structure, I’ve rarely observed it in most institutions.

Making any support model work at its optimum requires excellent communication between IT and Access Services. Currently there is adequate communication between the two departments but there is room for improvement. In order to best serve the needs of students with disabilities, AS and IT staff must work together, using their respective knowledge and skills toward this goal. The IT-supported model at the University of Washington has some of the following attributes that may be useful for Olympic College to consider:

- **Provide a discrete staff position** to support AT and work directly with students. The person in this position should have an office located adjacent to or within a primary computing facility in order for students to get quick answers to questions or schedule times for in-depth training. This position may have other duties but AT support to students should be its primary focus. Other duties may include assistance with alternate text production, training and evaluation for accessible web and application design, and meeting with community members who seek AT information.

- **Hire student workers** to support AT users. The University of Washington has had success hiring long-time AT-using students in these positions. Students and staff providing support in facilities that include AT should have basic training in the AT applications in order to provide front line support.

- **Provide a single point of contact** (with backups for staff leave) within the IT and the AS departments for handling IT/AT trouble tickets. Issues with support, maintenance, troubleshooting, etc. should occur via these channels whenever possible. This will help create a sense of ownership in both units.

Additional ideas may include offering regular training times to student clients, providing classroom-type training for groups of students (outside the for-credit current offering), and provision of a brief AT-related talk of thirty minutes during orientation for all students. In-service training to Access Services staff for technology issues and for IT staff in disability knowledge can also improve service, efficiency, and working relationships between the units. Making AT services work effectively for all students requires strong lines of communication
between involved parties, especially AS and IT staff. Students should be involved when possible; if there is a disability-related student organization on campus, consider offering AT-related talks at one or more of their meetings.

Another possible home for an AT/Accessibility worker could be in the Distance Learning unit at Olympic College. With the increasing importance of online offerings, both for supporting materials and completely virtual courses, having accessibility expertise within Distance Learning may be considered. Regardless, any recruiting for future positions on campus that involve design, development or updating of online materials should include at least a line in the desired qualifications for accessibility knowledge.

Efforts to deploy any technology -- whether online applications or physical equipment -- for Olympic College students should include consideration of its impact on students and employees with disabilities. A portion of student technology fee funds can be used toward this goal, or it may be possible to create a reserve fund that can be accessed to provide rapid procurement of needed technology. This approach can help avoid spending money on technology that won't be used. In interviews with staff at OC, it appears this funding method is a future goal, and should be pursued.

Based upon interviews and observations, the OC Access Services (AS) office provides a good level of support to students with disabilities. AS staff clearly are engaged and caring, and balance the institution’s service obligations with integrity and dedication. Improvements can be made in some areas such as providing accessible electronic versions of required forms, updating some technology in their testing center, and updating training for alternate text provision. Attention to web accessibility is needed throughout the College’s web site, including Access Services. Additional IT support is clearly needed to assist deployment of equipment such as a braille embosser or software such as JAWS. On balance, AS staff that must work with technology need to work with campus IT experts in order to provide at least first tier support for equipment and software in their area. Senior level staff should not have to relay service requests for IT support. Like all higher-ed institutions, Olympic College needs to be prepared to create braille documents despite current lack of braille-reading students. The amount of effort needed to prepare and create braille leaves very little time in the schedule of a busy academic term. Timely delivery of alternate text materials (e-text and/or braille) has been the basis of past Office of Civil Rights decisions against colleges and universities in other parts of the country. Instructors have a vital role in this workflow, and must provide timely notification of reading materials, assignments, and due dates with an eye toward the alternate text creation process. As much as possible, lead time should be measured in days or weeks, not 24 or 48 hours.
So far we have identified three stakeholders in the arena of service provisions for students with disabilities: IT staff, AS staff, and faculty. The fourth stakeholder group is often neglected and that is the students. It was clear from interviews that many Olympic students lack basic technology skills. Regardless of whether this is a reflection on the local K-12 systems, technology training can be incorporated into nearly any course, where students can learn not only the individual steps required to complete tasks, but also workarounds, keyboard shortcuts and underlying technology. Attaining a better understanding of technology, whether it's considered mainstream or every-day, or specialized assistive technology, will improve the overall skills of all students and their employability. It’s as important for the students to embrace this concept as it is for the faculty and staff to encourage it.

RECOMMENDATIONS

- At least one Olympic College staff member needs to take the lead on supporting AT. This position is optimally housed within Information Technology.
- At least one Access Services staff member should have mid- to high-level general technical knowledge (operating systems and networking) to increase self-support capabilities and help balance workload for IT.
- Alternate text production workflow, software, and equipment should undergo review and evaluation.

SERVICE LOCATION

Availability and distribution of AT-enhanced computer workstations throughout the main Olympic College campus is limited. Providing accommodations in areas where students gather to perform computing tasks is important. Not only does this coverage provide more effective and thorough service for students with disabilities, but the visibility of such accommodations increases understanding of the need for universal design for all persons on campus. Olympic College can demonstrate a commitment to provision of computer-related services for all students on campus by including AT on workstations in more locations other than the library and assistive technology room. The IT department currently supports installation of the client software for screenreading and magnification as requested, however they should consider including these applications as part of the base image installed on more systems that they support.

In addition to coverage in public areas, it’s also necessary to provide some secluded locations for AT workstations. Many users of speech input technology are uncomfortable vocalizing text and commands in public areas, or may be creating text content that may be construed as ribald, risqué or racy if spoken aloud. In computer lab settings, use of speech input can be distracting
to other computer users. There are also some students with distraction problems due to a learning disability or ADD/ADHD who benefit from computer use in a quieter environment. These issues combine to justify locating at least one work area that is more segregated yet centrally located. This location is adequately served in the Business 100 room, although the hours that this room are open are quite limited.

Though current AT usage levels on campus are low, additional marketing via AS consultations as well as improved on-site support and availability can increase computer usage by students with disabilities.

Direct in-person support of the AT-enhanced workstations can be challenging when they are distributed throughout campus. Oftentimes it is student employees or non-IT staff that provide this front line support. To that end, these support personnel should have a basic familiarity with the capability and purpose of the AT options installed in or near the areas that they work. This could be a module that is part of student worker training. In visiting the computing facility in the ST Building facility, the support person on duty was unfamiliar with any accessibility options when I inquired as to the location of a nearby accessible workstation. Additional inquiries to other staff indicated that introductory AT knowledge is not uniformly provided. An additional benefit of providing such training also offers the opportunity for IT front line workers to have a higher comfort level working with people with disabilities, which is an element of effective customer service. Access Services staff can and should assist with this training.

General computing resources offered in locations such as general computing labs, tutoring centers, or the library should also offer access for students with disabilities. This is sparsely offered at Olympic College, however interviewed staff are willing to work with AS if accommodations are requested. Realize, however, that if such resources are not offered by default, many students will not request them. If loaner laptops are offered to all students through a checkout process, staff should have a plan to install AT on these systems – a student with a disability should not have to wait for a laptop if their fellow students do not have to.

**RECOMMENDATIONS**

- Develop wider installations of AT on workstations throughout campus.
- Maintain and update AT workstation in the ST building.
- Provide introductory AT training as part of student and staff orientation/training as well as basic concepts of working with people with disabilities.
- Verify that any laptop checkout programs have a plan, if not immediate resources, to provide AT hardware/software if requested.
Additionally, if an AT manager/support position is created, the person in this position should have their office as close as possible, if not within, the highest-trafficked computing facility used by students with disabilities.

### EQUIPMENT AND SOFTWARE

Colleges should be prepared to serve the needs of computer users with a variety of disabilities. However, it is difficult – if not impossible – to retain a complete supply of all possible AT hardware and software for any potential student or staff member at an institution. There are thousands of products in this field, and they are regularly updated or made obsolete. Olympic College provides minimal coverage on AT workstations for accommodating some major disability types and needs improvement in some key areas. A list of web sites for sample products is included in the appendix.

Provision of **adjustable-height furniture is satisfactory**. This is a key component of offering accessible workstations and the classrooms visited provided few or no options for adjustable seating. The testing center should have more than one adjustable height workstation option as well. The notable exception to this was in the library. There should continue to be at least one adjustable workstation in that location as well as anywhere students gather to work on computers. The adjustable tables need to be easily manipulated by a person in a wheelchair – some of the tables observed have the crank access at the rear of the table, a location that will be inaccessible to some users.

Support of **speech input technology (NaturallySpeaking) is lacking**. Recommended upgrade cycle is every other version. This software does require higher-end hardware – it’s one of the few applications that truly takes advantage of the newest processors and plenty of RAM. While not regularly used, there should be at least one current license available on campus, ready to be installed in a location convenient to a prospective user. While both Mac and Windows OS provides support for speech input, third party software provides a much improved experience and greater utility within a variety of applications. This third party software should be no older than one revision behind the current commercially available version.

Installation coverage of **JAWS for use by blind students is adequate**, available in various locations with network license managed by IT. The version observed is slightly dated. An additional benefit of the network version or extra licenses is that this software can be made available to campus web/application developers to test the accessibility, not only of their work, but also any campus- or department-wide software that is being evaluated for purchase by the institution. An open source alternative to JAWS is NVDA, which is no cost to the institution and becoming increasingly popular for some blind users.
Scanning/OCR/reading software is currently provided for student use. Examples of this software include standalone OCR apps such as ABBYY FineReader or dedicated accommodation products such as ClaroRead Plus. This may be installed on workstations with an attached flatbed scanner and is not a replacement for e-text provision by the college. It is can be used to convert academic print materials to electronic text, not only for students with visual impairments, but also for those with a learning disability that affects reading. It is not adequate for high volume e-text production such as conversion of entire textbooks, but is quite good at serving as a tool for accessing print of material handed out in class or for short print articles. A common location for this at many colleges is within the library. At OC, this is available in BUS 100, a facility that has limited hours.

At nearly every peer institution I’ve visited or communicated with, the number of students with some form of learning disability (including ADD/ADHD) matches or exceeds the number of all other disabled students combined. Based on figures mentioned by AS staff during my visit, this is also the case at Olympic College. However there were no simple products observed to be installed on AT workstations to address the needs of students in this category nor were they indicated in interviews with IT staff. Students can use WYNN software, or in some cases the speech-to-text tools within the magnifier ZoomText app (very effective) but there should also be some lightweight and low cost solutions such as Balabolka or NaturalReader. Having students experience low and no-cost text-to-speech software will give them viable and affordable options once they leave the college environment. Some basic accommodations on computers in the testing center are available and no-cost options should be in place as well. Making these applications part of the basic image for deployment campus-wide would be relatively trivial for IT staff.

There are a wide variety of applications designed to address the needs of students with learning disabilities. In my experience, the vast majority of students with these needs prefer to use products with simple controls and limited feature sets. They don’t request the full-featured programs such as WYNN or Kurzweil 3000 – they’re quite happy to use products such as NaturalReader, Balabolka, or similar. There are free versions of these simple text-to-speech applications and the low cost “plus” versions offer very high quality synthesized voices. However, it’s important to be prepared to quickly acquire and install more richly-featured applications such as WYNN or K-3000 as some students have used these products extensively in their K-12 academic career. Unfortunately they are not inexpensive, which is why I recommend that institutions only support one of the high end solutions and upgrade it every other version cycle at the most.

There is currently limited screen magnification software installed on IT-supported workstations. Exceptions are some dedicated stations in BUS 100 and one or two computers in
the ST facility. At most institutions, users with visual impairments that benefit from this technology outnumber students who are entirely blind who use a screenreading solution such as JAWS. At a minimum, there should be an up-to-date single license for this software that can be installed where needed on short notice. Olympic College has a network version of magnification software and it should be included as part of the base image deployed to workstations around campus. It is possible to accommodate very quick turnaround needs with demo versions of products such as ZoomText (AISquared) or MAGic (FreedomScientific). A benefit from the Reader versions of these applications is that they offer excellent text-to-speech capability that also benefits students with learning disabilities.

As a side note, it is not recommended to rely on the AT applications built-in to the Windows or Mac operating systems as an adequate accommodation for use by students with disabilities. These applications serve as the minimum level of access needed to install more richly featured screenreaders, magnifier software and/or on-screen keyboard applications. However, the relevant control panel apps do serve well for basic keyboard or mouse accessibility.

AT-enhanced workstations should have large print labels on the keyboards and at least one set of large print labels should be on hand in the case that a system needs to be converted to one of the three Dvorak layouts (right, left, and two-handed). Staff should be familiar with setup of these alternate keyboard layouts. In the Windows OS, this is via the language settings control panel. For the Mac OS, the Dvorak input language can be found in System Preferences->Keyboard->Input Sources.

A diverse selection of alternative keyboards and mice make it possible for students, faculty and staff who are experiencing repetitive stress injuries such as tendonitis or carpal tunnel syndrome to test drive a number of options in this accommodation category. There is no single solution for these types of injuries and different people will find different keyboards to reduce pain and increase effectiveness. At least one or two alternatives for standard keyboards and mice should be on hand, such as a GoldTouch keyboard and Expert Mouse Trackball. The Maltron keyboards observed in BUS 100 are a start, but also are expensive and useful to a relatively small number of potential users. This is in addition to keyboard held in reserve for student checkout.

AT hardware includes such items as braille displays, alternative keyboards and mice, embossers, head pointing systems, switch input systems and even eye gaze controls. As noted above, it’s not feasible to maintain a complete inventory of all possible AT hardware. However some of these basic options should be on hand as there might be short-term immediate needs that cannot be accommodated as easily as software-based solutions that may be acquired via a download. Recommended hardware basics include:
- Embosser: Base level: text embosser (e.g. Enabling Technologies Juliet Pro) including braille translation software (e.g. Duxbury). Advanced level: graphics embosser (Enabling Technologies Phoenix).
- Switch input: Advanced level. Not needed to maintain in inventory but staff should be aware of solutions and know where to purchase if needed.
- Keyboards: Base level: two examples of alternative keyboards such as a mini keyboard and/or so-called ergonomic keyboard. Advanced: a longer list of mini, “ergonomic”, light touch, expanded, and keyboards labeled for one-handed use.

Base workstation hardware (motherboard, CPU, RAM, video card) should match other hardware whenever possible. This assures that all workstations have similar capabilities and appearance. It also eases support for all IT staff when troubleshooting or swapping out failed components when repairing hardware problems. IT staff can communicate with peer institutions for recommendations on AT workstation hardware. However, most AT doesn’t require special hardware to operate properly. It’s possible to order hardware for all workstations that match these specifications so that more AT software can be installed and served to all workstations.

Olympic College lifecycle planning for workstation hardware (three years) is in line with peer institutions.

RECOMMENDATIONS

- Deploy network version of screen magnification software to base image
- Install free/low-cost text to speech products at all workstations
- Consider inexpensive OCR/PDF conversion software (e.g. PDF Converter, Acrobat Pro)
- Large print keyboard labels installed and some spares
- Adjustable height workstations in library AT room and more locations
- One or more mouse/keyboard alternatives available

WEB AND IT ACCESSIBILITY

Students, faculty and staff all rely heavily, if not in some cases completely, on web-based information in order to complete their academic and professional tasks. The importance of delivering this electronic information accessibly cannot be understated. At top levels of the Olympic College web site, it is clear that concepts of accessible design need attention. This is an ongoing effort at all institutions, and constant work is necessary to maintain and improve accessibility. Staff turnover, increasing numbers of contributors, and desire to utilize new and
attractive technology are all factors that can derail efforts to provide the widest array of users with an effective and appropriate web experience.

An exhaustive accessibility check was beyond the scope of this project and not performed, however some significant accessibility problems were observed at some of the top level web pages (accessed from www.olympic.edu in March, April and May, 2014). A report of the quick assessment is attached at the end of this document, and should be distributed to members of the IT staff who work with online content and web design. During the site visit, members of the web team were interviewed and it was disclosed that the overall design will be undergoing revision soon. Olympic College staff did not perform any accessibility testing on the new site design and reported that they could benefit from resources and checklists for this type of work. Although 508 compliance was reportedly part of the RFP process, it’s clear that the contracted vendor failed to achieve accessibility in a variety of design choices. For example, the rotating graphics and text on the main page (sometimes referred to as a carousel) is not at all accessible to screenreaders and cannot be controlled with the keyboard. In fact, it cannot be stopped or paused even with mouse control. Header tags are used inconsistently and some images are used in the background and do not provide any alternative text. In some instances link text used was not relevant to the associated information (e.g. “Full story”, “More”). Some key links targeted Acrobat or Word files, which will pose difficulty for those using browsers on systems that don’t support those formats due to their choice of operating system or device (e.g. cell phone or tablet). Key information should always be displayed in html whenever possible, as that format is least dependent on technologies such as PDF readers or Flash players. Fortunately, no Flash content was observed on the Olympic site.

Web development staff interviewed were incompletely aware of accessibility issues and could benefit from pursuing further accessible design training. This additional knowledge would also allow them to communicate with outside vendors who are providing online learning and administrative solutions such as overall web site design, NeoGov HR content, Angel, and Canvas.

IT staff can improve their knowledge of the case for accessibility, both from legal and ethical positions. As at peer institutions, this is an ongoing challenge, where the push to publish “fresh” content and designs can often overwhelm attention to maintaining accessible templates and standards. Additional and continued training opportunities in the area of accessible/usable design should be pursued by one or more key IT staff. Access Services staff should be able to answer questions about recent legal decisions that have affected higher education institutions throughout the U.S. Higher education institutions face a risk of legal action due to accessibility shortcomings, a kind of PR that is undesirable.
Organizations such as WebAIM and institutions such as the University of Washington offer extensive accessibility resources to web designers and content developers. Opportunities for training and information at conferences such as Accessing Higher Ground and CSUN may be useful as well.

Administrative applications such as the upcoming PeopleSoft implementation should also be evaluated for accessibility. Accessibility is not only a concern for student-facing systems but can also affect faculty and staff as far as their ability to complete their job. Some may consider employment-related accessibility to be an even larger risk than student issues. Regardless, it's an area that should be a key component of any RFP for future procurement of information technology, whether it's human resources, financial, LMS, CMS, or other types of applications, whether delivered online or standalone workstations. Testing of staff-facing components of any applications should be included in the accessibility requirements for procurement.

Both students interviewed indicated challenges using a variety of Olympic College online resources and reported that there were tasks they could not complete independently. One student stated that ALEKS software was impossible for her to use without someone to help her. These students reported overall satisfaction with AS-provided services but consistently mentioned problems using web-based resources. Web staff can leverage the knowledge of experienced AT-using students in testing applications and web sites for accessibility.

Many colleges and universities are reporting significant accessibility problems with LMS solutions such as Canvas and Angel. It's important for institutions – the customers of these vendors – to insist on improved accessibility and include contractual language that provides a method of redress in cases where a product is delivered with key inaccessible features, or through automatic updates loses functional accessibility. Through professional organizations such as ATHEN (Access Technologists Higher Education Network), accessibility specialists are attempting to address the current Canvas accessibility problems and making progress, however it's still incumbent on customer institutions to push vendors to improve accessibility.

If someone from any unit chooses IT and it's later determined it poses an accessibility problem, it's not Access Service's responsibility to fix the challenge and certainly not the student's. It's the responsibility of the person or organization that makes that purchasing decision and supports the software.

At times the umbrella organization does not make fully informed decisions about acquisition of accessibility. The fact of poor Canvas accessibility (when acquired), well-known problems with ALEKS, as well as problems with COMPASS does not rest at the feet of any single institution, but schools and concerned staff can provide feedback to the State Board for Community &
Technical Colleges to indicate that future procurement decisions cannot afford to ignore such an important facet of technology.

RECOMMENDATIONS

- Test existing web pages and in-house applications for basic keyboard (non-mouse) accessibility and HTML validation.
- Require accessibility as a core feature in procurement of IT, including contracted web site design, custom applications, and related hardware. Do not rely on Voluntary Product Accessibility Templates (VPATs) supplied by vendors.
- Establish a staff position responsible for evaluating accessibility.
- When possible, include end users of AT to answer specific questions about accessibility issues.
- Include accessibility experience/knowledge in desired or required job descriptions when recruiting web designers and/or developers.

SUMMARY

This review provided an excellent opportunity to capture a snapshot of AT provision and plans at Olympic College. It is clear that OC has a desire to provide access to higher education for all students on campus. It's also clear that the overall culture of accessibility can be improved, where individual departments outside Access Services do not say "that's not our problem" when faced with a student asking about accessibility. The commitment and dedication of the staff met during this brief visit was impressive – other institutions would be fortunate to have such dynamic, knowledgeable and motivated contributors. Much work remains, however, and the above recommendations are not viewed as notable failures, but as opportunities for the campus to not only increase access for students with disabilities, but to improve the entire Olympic College climate.

I would be happy to provide follow-up answers to questions that arise from this report.

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Following is a sample job description that can be modified for use in the Olympic College system:

**Staff Position: Accessible Technology Consultant**

Funded by: 100% IT

Job Classification: Senior Computer Specialist, Professional Staff

Supervisor: IT Manager

Office: Near primary computing facilities & other IT staff

Work hours: full time weekdays

**Overall Role**

Manage Accessible Technology Services for the institution. This role provides computer, assistive technology and related technical support to students, faculty, and staff with disabilities. Coordinate purchase and maintenance of AT hardware, software and resources. Consult and advise regarding making campus electronic and information technology accessible to people with disabilities.

Optional: Provide braille and tactile graphics materials for campus units and maintain equipment used by Disability Services for producing alternate academic materials for students with print disabilities.

**Specific Responsibilities**

Manage accessible technology workstations. Working in concert with relevant IT personnel, install, support and maintain AT software on standard computer lab machines. Hire, schedule, and supervise student, temporary, and full-time staff as needed.

Research assistive technology and stay abreast of new developments in the field.

Provide consulting in the development of accessible Web sites and applications. Participate as part of IT teams evaluating new technology for acquisition and provide accessibility expertise.
Deliver presentations on accessible technology, mobile technology, accessible web and application design, and related technical areas to campus units.

Recommend and draft purchase requisitions for equipment and software. Develop requests for Technology Fee funds.

Assist campus units in production of materials in Braille, tactile graphics, and alternate text.

Provide accessibility consultation to campus IT units in other departments.
ACCESSIBLE WEB DESIGN, CONFERENCES, ORGANIZATIONS

Section 508 web accessibility: www.section508.gov

Accessing Higher Ground Conference: http://accessinghigherground.org/

ATHEN: www.athenpro.org

CSUN: www.csun.edu/cod/conference/

UW Accessibility: www.uw.edu/accessibility/

WebAIM: www.webaim.org

PRODUCT REFERENCES

Listing of specific products and manufacturers is not an endorsement by the University of Washington.

KEYBOARDS

Goldtouch: www.goldtouch.com

Large Print Keyboard Labels: www.enablemart.com/large-print-labels

MICE AND ALTERNATES

Expert Mouse Trackball: www.infogrip.com/expert-mouse.html

SOFTWARE

VISION

Duxbury Braille translation: www.duxburysystems.com

Enabling Technologies embossers: www.brailler.com
JAWS and MAGiC: www.freedomscientific.com

NVDA: www.nvaccess.org

ZoomText: www.aisquared.com

TEXT-TO-SPEECH (TTS)

These applications provide access to students with print (not visual) impairments such as dyslexia. They typically operate by selecting text and having the computer read that text with a synthesized voice.

Balabolka: www.cross-plus-a.com/balabolka.htm

ClaroRead: www.clarosoftware.com

Kurzweil: www.kurzweiledu.com

NaturalReader: www.naturalreaders.com

OTHER

Optical Character Recognition (OCR) software is not typically considered to be AT software, yet it is useful for students with print disabilities to use for simple document conversion (print or PDF to text-selectable content). Skills in using OCR software may translate to the professional environment.

FineReader: www.finereader.abbyy.com

Third party speech input software provides hands-free access to text input and application control by users with mobility impairments. In some cases, people with text processing disabilities may also use speech input successfully.

(Windows)NaturallySpeaking or (Mac)Dragon Dictate: www.nuance.com/dragon/
Overall, the Olympic College web pages are designed in a simple fashion that is readable on a standard laptop or desktop computer. Where text is small, it scales adequately for basic magnification using browser zoom controls (Ctrl-+ keys). However there are some significant accessibility issues found throughout the OC web pages that indicate a need for improved accessibility and usability. For most evaluations of accessibility the following features MUST be provided:

- Full keyboard functionality of all menus and features of the web site. Many users cannot or choose not to use a mouse. Keyboard functionality is a basic tenet of accessibility and will provide access for users of screenreaders as well as those who do not use a mouse.
- Heading structure provides information about how a document is organized. Headings (h1, h2, etc.) are a vital component of building web-delivered content. In many areas of OC web pages, headings are completely lacking or sparsely provided. Headings are not just for visual effect – they provide important clues as to how information on a web page is organized. Screen reader users can navigate web pages via headings, just as sighted users can skim a page by focusing on these headings, but it’s important that headings be coded correctly and not just be text that is larger and bolder.
- Default focus indicator is the outline that moves with use of the Tab key and indicates visually where a user is interacting with a web page when they are not using a mouse. In some areas of the web site, this focus indicator is disabled, making it impossible for a keyboard user with sight to interact/use web pages.
- ARIA landmarks can provide important information about how a page is structured for screenreader users. Areas of the screen (banner, navigation, main content, etc.) are identified with simple HTML tags.
- PDF content should be evaluated and converted to HTML when possible. HTML is universally available on any device that can access internet content.

HOME PAGE
(http://www.olympic.edu/index.htm)

Unless otherwise indicated, the following comments on the main OC web page apply to child pages as well.
• Flyout main menu is not keyboard accessible.
• Items within the menus are not all found on landing pages (top level links of menu items). These flyouts are very densely populated and an alternate approach should be considered. The menus are also not usable on mobile devices – there is no way to hover on a mobile device.
• Too much white space at default zoom, results in default text size that is too small on mid-large size monitors. Sizing should be proportional, not absolute. Percentages, not pixels.
• Tables should not be used for layout. Use CSS for display & positioning
• No ARIA landmarks are present.
• Color contrast (text foreground vs background) is good, although red text on gray background (Office Hours box on home page) fails contrast check.
• Skip navigation link is not present
• No <h1>, several <h2>
• Search field lacks a label attribute. Make sure that labels are present for ALL form fields.
• Because text navigation(link) elements are crowded, the default focus indicator is difficult to see. Consider an enhanced focus indicator style.
• Content display scales well when zoomed using browser controls.
• Cycling/carousel content area (javascript controlled) is not accessible – content is not read, although user can get to it with a keyboard, activating the target content is difficult or impossible with a keyboard.
• Linked items should not open in a new page, especially when target is within the Olympic.edu domain.
• Many child pages contain images that lack alt text for the img attribute.
• When HTML is validated, numerous errors (65 on day of test) are noted, including some items listed above.
• The home page DOES pass CSS validation. Nice work, this is not common.

RN/BSN PROGRAM PAGE
(http://www.olympic.edu/rn-bsn/)

This page has undergone recent redesign. At the request of the web team, here is an accessibility evaluation.

• No headings are present on the page. Child pages examined also contain no heading structure.
• No ARIA landmarks or roles are present.
• Margins are less than main site, improving readability.
• Base font size is larger than main site, improving readability
• PDF linked on the page could be conveyed in HTML (PDF content is primarily a simple page of text). No indication that the graphic is a link to a PDF file.
• Color contrast (text vs background) fails in some areas, such as gray text that has the appearance of headers on a white background, or red text on gray background.
• Navigation scheme present in top level (white text on blue bar) disappears on child pages.

ACCESS SERVICES ACCOMMODATION FORM

(https://www.olympic.edu/forms/AccommodationRequestForm.aspx)

No headings on the page
No ARIA roles/landmarks
Tables are used for layout instead of CSS
Form fields do not have labels
Background color of navigation menus items has changed to black
Navigation options for within the Access Services section are missing (no left hand navigation)