CSU Accessible Technology Center Project Final Report
December 2011

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I.   Financial Summary

- Total Project Budget Spent: $3,000,000
- CETF Grant Amount: $750,000
- Percentage of Match Funds Raised against Goal ($750,000):   74.5%
- Cost Per Unit of Outcomes: (Total Outcomes/Total Budget) $7,500

Calculated using 49 items completed, 11 in progress (counted as half) and 53 ongoing, which totals 107.5. Rounding down to 100 and using the total amount of the grant over the 3 years of $750,000 yields $7,500 ($750,000/100).

II.   Project Description, Goals and Objectives, and Outcomes

Project Description

The original goal of this project was to establish an Accessible Technology Center located at The California State University (CSU) Office of the Chancellor in Long Beach. The goal of the Center was to increase the procurement and development of accessible electronic and information technologies (E&IT) used by 427,000 students (including 11,500 with disabilities) and 44,000 staff and faculty acrossthe 23 campus CSU system and beyond in a way that promotes universal design in the Information Technology (IT) and Internet industries. E&IT includes websites and Web applications, hardware, software, telecommunications, multimedia, and other IT-related products.

The goal evolved into a CSU systemwide collaborative effort to support the procurement and development of accessible information technologies that conform to the technical standards of Section 508 of the Rehabilitation Act as amended in 1998 which seeks to incorporate accessibility into mainstream IT. Established in 2007, the CSU Accessible Technology Initiative (ATI) was the first postsecondary education initiative of its kind in the US. This grant project supported the ATI's efforts to develop policies, practices, and procedures that integrate accessibility into business processes that lead to sustainable removal of accessibility barriers for persons with disabilities and the ATI's commitment to developing tools and training to support those business processes. The ATI shares its processes, supporting tools, and training and collaborates with other postsecondary institutions and a variety of government agencies. The ATI also works with vendors to improve the accessibility of E&IT products used in both education and other enterprises.

Goals and Objectives Summary

The goal of the Center was to increase the procurement and development of accessible electronic and information technologies (E&IT) used in the 23 campus CSU system and beyond in a way that promotes universal design in the Information Technology (IT) and Internet industries.It became clear early into the project that a systemwide Center would not be the best way to "increase the procurement and development of accessible electronic and information technologies (E&IT) used in the 23 campus CSU system and beyond in a way that promotes universal design in the Information Technology (IT) and Internet industries" which was one of the main project goals. The campuses are too diverse and independent in their procurement processes and needs to achieve the goal in a centralized way. The goal remained but the method to achieve it was modified.Instead

ofcentralizing all E&IT procurementsfor the 23 campuses, the ATI Procurement Standardization workgroup collects and reviews campus documentation regarding procurement practices and recommends those that are most effective in driving the adoption of accessible E&IT.

The project objectives /outcomes were largely accomplished or resulted in establishment of ongoing processesthat will ensure continuing accessibility in the areas of web accessibility, procurement or adoption of electronic information technology, and delivery of accessible instructional materials for CSU students, faculty, staff, and the public at large. Outreach and collaborative efforts were successful which resulted in the CSU receiving recognition as a national leader in the implementation of policies, procedures and practices that led to sustainable removal of accessibility barriers for persons with disabilities. In February, 2012, the CSU ATI delivered testimony to the US Senate's Health, Education, Labor and Pensions (HELP) Committee regarding issues, strategies, and accomplishments associated with accessible technology in higher education. The CSU has presented extensively at international, national, and regional conferences regarding accessible technology.

The ATI has provided guidance to disability advocacy groups including the National Federation of the Blind as well as other University systems regarding the implementation of accessible technology policies and procedures. Additionally, the CSU successfully collaborated with EIT vendors to improve the accessibility of products, collaborated with advocacy groups to increase accessibility awareness, and worked with other government agencies and postsecondary education institutions to promote accessibility awareness and to share implementation strategies. The ATI staff serves on several product advisory boards including the Accessibility User Group for the Elluminate webconferencing product and the Accessibility Interest Group for the NOOK Study eTextbook platform. The ATI also collaborate with vendors to deliver conference presentations regarding product improvements including an eTextbook accessibility presentation with Course Smart in March, 2012 and a multimedia accessibility presentation with NBC Learn to be delivered in March, 2013.

During the first year of the grant, the project had 4 goals and 39 objectives/outcomes. Eight objectives/outcomes were either removed or modified and rewritten into outcomes included in subsequent years. Of the 31 remaining objectives/outcomes:
- Twenty-seven (87%) were completed or established as ongoing processes.
- Four (13%) were in progress.

During the second year of the grant, the project had 5 goals and 65 objectives/outcomes. Twenty one objectives/outcomes were either removed or modified and rewritten into outcomes included in the last year. Of the 44 remaining objectives/outcomes:
- Thirty-seven (84%) were completed or established as ongoing processes.
- Three (7%) were in progress.
- Four (9%) were not started.

During the third and final year of the grant, the project had 7 goals and 58 objectives/outcomes. Twelve objectives/outcomes were removed. Of the 46 remaining objectives/outcomes:
- Thirty-eight (83%) were completed or established as ongoing processes.
- Four (8.5%) were in progress.
- Four (8.5%) were not started.

Project Outcomes Summary

The ATI Annual Reports illustrate the continuous business process improvement that occurred during the grant project. Campuses report their status levels for main goals and sub-goals (Success Indicators) in each of three ATI areas: Instructional Materials, Procurement, and Web. The status levels campuses use are defined as follows:

Success Indicators were determined using the following criteria:

Status Level	Description for Procedures	Description for Documentation	Description for Resources
Optimizing	The campus has a mature practice. Additional procedures are in place to	Documentation is continually revised to reflect the managed practice. Periodic administrative	Resources have been both identified and allocated. Periodic

Status Level	Description for Procedures	Description for Documentation	Description for Resources
	conduct regular administrative reviews of success indicators to gauge effectiveness and implement improvements.	review of documentation is conducted.	administrative review of resource allocations is conducted.
Managed	Campus has a mature practice. Additional procedures are in place to track and capture success indicators (milestones and measures of success).	Documentation is complete and fully reflects the standard practice.	Resources have been both identified and allocated.
Established	Campus has a standard practice. Procedures are consistent and formal.	Documentation is complete and fully reflects the standard practice.	Resources have been both identified and allocated.
Defined	Campus has a common practice. Any procedures in place are consistent but informal.	Documentation, if present, is in working draft form.	Resources have been firmly identified but not yet allocated.
Initiated	Campus has an ad hoc or developing practice. Any procedures in place are generally ad hoc.	Documentationis generally absent.	Resources have been tentatively identified but not yet allocated.
Not Started	No action has yet been taken.	No documentation has yet been generated.	No resources have yet been allocated.

The systemwidestatus level for 2010-2011 main goals and Success Indicatorswas computed using the median* status level across all 23 campuses.

*The median of a data set is the "value" that separates the top half of the data from the bottom half after the data has been sorted. From a positional standpoint, in a list of responses ordered from 1 to 23 (one per campus), the response in position 12 represents the median. That means 11 campuses rank at or above the median and 11 campuses rank at or below the median.

The ATI implementation began in AY 2006-2007. The initial status value for these outcomes was Not Started. The table belowshows that the median CSU campus has increased their status level for all 8 goals. Most CSU campuses are now at or above the Established level for 4 success indicators and at or above the Defined level for the other 4.

Outcome Description: Systemwide median status level for institutions across the system that:	Goal #	Status Level 2010-2011
Put a Web accessibility evaluation process in place	I & VII	Established
Put a new Web development process in place to ensure "designed in" accessibility for new websites/web applications.	I	Established
Put an accessibility monitoring process in place to ensure websites remain accessible as updates are made.	I	Defined
Put a Web accessibility training process in place	I	Established
Improved accessible procurement procedures	II	Established
Put an accessible procurement training process in place.	II	Defined
Implemented a process to improve the accessibility of multimedia	VI	Defined
Implemented a training process to support selecting, authoring, and distributing accessible instructional materials	VI	Defined

IV.   Accomplishments and Challenges

Summary of Accomplishments and Impacts of Project

Assessment of Outcomes Achieved in Comparison to Grant Agreement

- **Goal I – Increasing web accessibility across the CSU:** One of the most beneficial and consequential outcomes of the project was that thepolicies and processes surrounding the accessibility of the CSU's millions of webpages and thousands of web applications were improved which resulted in increased accessibility for students, faculty, staff, and the public-at-large. Leveraging the accessibility expertise across the CSU system proved to be an effective strategy to craft generic solutions to common systemwide web accessibility problems (e.g. establishment of the CSU ATI Standardized Accessibility Requirements, implementation of a common enterprise accessibility evaluation tool access 21 CSU campuses, improved manual accessibility testing process, and a varietyof trainings). Systemwide progress is monitored by a yearly campus self-assessment and reporting process. The training and accessibility information developed over 3 years is publically available and is used by other educational, private sector, and government institutions to improve web accessibility for a global audience. Business process improvement in the Web Accessibility area will always be an ongoing activity.

- **Goal II – Increasing the capacity of the CSU to purchase/adopt the most accessible EIT products and become a model for other postsecondary institutions:** The need for a generic procurement process that integrated the components necessary for purchasing the most accessible products became evident from feedback received from our campuses. Many different types of procurement processes are used across the CSU (e.g. computerized, paper, use of systemwide CMS) and the point that accessibility needed to be considered was not always clear in many of the campus procurement processes. Our most notable accomplishment in this area was formation of a systemwide procurement project group to collaboratively research current campus-level processesand then recommend a generic process through whichaccessibility would be considered at the beginning of the process along with continuing trigger points for Voluntary Product Accessibility Template (VPAT) review, accessibility testing, and equally effective access planning for products that have accessibility gaps.

   The process also includes more effective contract language, collaboration with vendors to improve product accessibility, and standardized templates that facilitate sharing product accessibility information between campuses and with other entities. Numeroussuccessful vendor collaborations to improve product accessibility (e.g. Google Applications for Higher Education, SurveyGizmo, and several eTextbook publishers) were also accomplished. Systemwide progress is monitored by a yearly campus self-assessment and reporting process.The CSU also developed the VPAT Database and VPAT wizard tools to support the accessible procurement process. The success of these two tools is covered in lessons learned. Business process improvement in the Procurement area will always be an ongoing activity. These activities directly reduce or eliminate the need to provide accommodations to work around product accessibility gaps. For example, prior to the ATI's work with Apple, iTunes U did not support assistive technology used by students with visual disabilities or closed captions for those who are deaf or hard-of-hearing. Campuses that adopted iTunes U before Apple remediated this accessibility problemhad to develop a separate web application to deliver iTunes U content for students with visual disabilities. This secondary delivery system is no longer necessary because the iTunes U service is now accessible for users with disabilities. This now benefits persons with disabilities enrolled at universities across the globe.

- **Goal III – This goal went through 3 major iterations over the 3 year period. The scope of the goal changed from (1) the CSU doing EIT evaluations and sharing results with other postsecondary and government institutions to (2) leveraging the CSU leadership to influence and accelerate the pace of accessibility implementation both statewide and nationally to (3) a CSU-centric goal that addressed the quality of the CSU websites:** In years 1 and 2 the CSU developed expertise in applying Section 508 to accessibility testing protocols and accessibility validation methodology both within CUDA and across the CSU campuses. The team developed preliminary procedures for integrating verification and testing of accessibility status of procurement status; refined heuristics protocol through user testing, and limited product testing; developed criteria for the selection of candidate EIT products for accessibility testing; and developed training; collaborated with several campuses to conduct accessibility testing. In year 3, the ATI team enhanced the

ATI websites, including the Communities of Practice Moodle courses (http://ati.calstate.edu), the CSU Professional Development for Accessible Technology website (http://teachingcommons.cdl.edu/access), and the Accessible Technology Initiativesite (http://calstate.edu/accessibility).

- **Goal IV - Influence the E & IT industry to build accessibility into products on a more routine basis and establish strategic partnerships with major EIT vendors:** The CSU Accessible Technology Initiative website provides many educational resources for EIT vendors. Resources are publically available on the CSU Professional Development for Accessible Technology website (http://teachingcommons.cdl.edu/access). Consultation and collaboration with EIT vendors has been integrated in our procurement process such that product accessibility improvements are part of completing the product purchase or adoption. If accessibility gaps are discovered during the VPAT review or during the product accessibility review, we work with vendor to prepare an "Accessibility Roadmap" for the product that includes a remediation plan and timelines to specify when the improvements will be made. The Accessibility Roadmap is frequently included in the contract language for the purchase. This vendor consultation and collaboration process is ongoing and will continually be improved. Several media articles were published about the ATI implementation activities during 2010 and 2011.Recent examples include:
  - California State University Ensures Web Accessibility for Visually and Hearing Impaired Students, (Campus Technology, 2011)
  - California State U. Report Warns of Accessibility Issues in Google Services (Chronicle of Higher Education, 2011)
  - Cal State's Strong Push for Accessible Technology Gets Results (Chronicle of Higher Education, 2010)

- **Goal V- Use feedback from students, faculty and staff with disabilities to evaluate project's progress:** ATI staff worked closely with Chancellor's Office Information Technology Services administrators and Web Services to develop and deploy a form whereby visitors to the Chancellor's Office website (http://www.calstate.edu) may report accessibility problems with any web page or document. A similar form was also developed and deployed to allow users to request information contained in web pages or documents in alternate, accessible formats. Templates have been distributed to campuses so that similar forms will be available across all CSU campuses.

- **Goal VI - Increase the CSU's ability to create, deliver, and maintain accessible documents:** This was part of Goal I in years 1 and 2 but was determined to be important and pressing enough to warrant its addition as a separate goal in Year 3. The project delivered multiple training and tutorials on creating accessible Microsoft Word, PDF, and PowerPoint documents. Each type of document required development of the accessibility standards for the document type, "how to" videos, and text based instructions for creating accessible documents. The training materials were produced by leveraging accessibility experts across the CSU campuses. Webinar based training sessions were held for the CSU system. Resources are available on CSU Professional Development for Accessible Technology website (http://teachingcommons.cdl.edu/access/).

- **Goal VII - Conduct Community of Practice Activities for Instructional Materials (IM), Procurement, Web, and Executive Sponsors:** This goal was added in Year 3 to explicitly set forth a method by which all other grant and ATI goals would beapproached and coordinated throughcollaboration with the CSU stakeholder groups. Its main focus was on monitoring the activities in each of the three priority areas (1) Instructional Materials, (2) Procurement, and (3) Web.The ATI Communities of Practice are the core of the collaborative ATI implementation effort across the CSU system. The three implementation areas Web, Procurement, and Instructional Material Communities are composed of a diverse group of stakeholders with hands-on ATI implementation responsibilities across the campuses. These Communities meet monthly. They recommend and work on ATI projects to solve common problems across the 23 campuses. The Executive Sponsor Steering Committee Community of Practice meets monthly and provides valuable feedback and recommendations regarding systemwide policy improvements and implementation strategies.

Delineation of Deliverables and Outcomes Not Achieved and Explanation

- Goal I: California Web Accessibility Conference (CalWAC) was cancelled because significant budget cuts across

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California prevented numerous universities from sending participants. Thus ATI sponsorship and partial scholarships for CSU attendees had to be abandoned.

- Goal II: Make optimal use of the Accessibility Testing Lab (ATL) at CUDA at CSULB. It was determined that one lab was not sufficient to do all the accessibility testing in the CSU. Therefore tasks associated with developing the ATL were abandoned. 2) Rather than operating 1 testing lab, it was decided that testing would be a collaborative effort involving campuses. CUDA was instrumental in the collaboration effort to improve accessibility testing across the system.3) Launch of the VPAT Wizard tool. The VPAT Wizard software application was designed to be hosted on one campus for the entire CSU. The beta version of the tool had security problems. As a result,none of the CSU campuses would consent to hosting the tool so thetasks to develop training and to measure baseline usage were abandoned.

- Goal III: Objectives and outcomes associated with the initial plan for a single testing lab for the CSU were abandoned due to a shift from the single lab approach to the collaborative systemwide accessibility testing approach.

- Goal IV: Develop and conduct a training program for vendors in collaboration with the ITIC was deleted due to a conflict in priorities. The CSU ATI consistently works with vendors to further their understanding of Section 508 requirements and to increase the accessibility of EIT products as part of the procurement process.

- Goal V: Evolve from using feedback from students, faculty and staff with disabilities to evaluate the project's progress to establishing a way for students, faculty, and staff with disabilities to submit any feedback they have on the accessibility issues or problems they face and the project's progress. All activities under this goal surrounded the establishment of an end user feedback system and ended up being abandoned due to lack of personnel and the existence of a system already in place that is sufficient for the time being.

- Goal VI: Develop a library database project plan with goals, objectives, scope, and test plan. This library database project is on hold due to other projects taking priority and lack of staff to oversee the project. (1) Gather feedback on accessibility metadata for Digital Marketplace users to inform creation of needed adaptations and then use it to make needed adaptations. The Digital Marketplace changed its technical architecture from providing a central catalog of resources to a shared service architecture that enables direct transactions between campuses and vendors. This change meant that no centralized accessibility metadata could be developed and implemented. This objective was therefore discontinued. (2) Survey faculty and staff to establish baseline satisfaction with materials and implementation of skills. A survey was not conducted however; training materials and resources were discussed and critiqued during the Communities of Practice meetings. The feedback from these discussions led to improved training resources like the MS Word 2010 modules. (3) Encourage government partners to adopt the standards, establish a method to monitor accessibility of documents, and establish a baseline measure of document accessibility from which to measure progress on an annual basis.The California Accessible Technology Collaborative Highway(CATCH) project was a collaboration between the CSU, State of CA, and the CA Community Colleges.This group met numeroustimes in Year 2 and produced a preliminary set of document accessibility guidelines. The group disbanded due to budgetary challenges and staff cutbacks in all government agencies and CA postsecondary education institutions.

- Goal VII: Evaluate the feasibility of creating a Community of Practice for campus Accessibility Officers. The CSU ATI does not have the personnel to organize and manage another Community Practice. The 2 staff in the ATI Office currently manages 4 different stakeholder Communities of Practice.

Discussion of Other Positive Results from Project

- Increased collaboration at the CSU Executive Level produced better accessibility policies resulting in a higher level of Executive support for the ATI.

- Establishment of a business process improvement strategythat is leading to more efficient and effective ongoing processes and procedures that support accessibility efforts in all three priority areas (Instructional

Materials, Procurement, and Web) systemwide. Integrating accessibility into the campus business processes creates lasting solutions for removal of accessibility barriers in EIT. Tools and training are more effective when the appropriate business process is in place.

- Improved reporting process to measure ATI implementation progress across the CSU campuses. The annual reporting process based on business process improvement provides a yearly assessment of progress made on each campus and an aggregate systemwide report provides snapshot of the accessibility progress made across system. The reports are used to identify gaps that can be addressed through systemwide projects.

- Leveraging CSU accessibilityexpertise across the system through systemwide project groups and campus contracts led to accessibility solutions that campus could adopt and adapt to meet their needs. This strategy will continue through our newly formed CSU Accessible Technology Network (CSUATN).The CSU Chancellor's Office contracts with several campuses to provide access to individual accessibility experts. The CSUATN accessibility experts will be providing accessible E&IT product documentation review, E&IT product accessibility testing, and collaboration with vendors to improve the accessibility of the products purchased by the CSU. The CSUATN will help reduce the redundancy of multiple review and testing of commonly purchased products across the 23 campus system.

- Effective deployment of accessibility tools that support accessibility efforts throughout the system.

- Relationships forged with other postsecondary institutions and government agencies will lead to increased collaboration in the future. For example in 2011-2012, the CA Department of Rehabilitation (DOR) invited CSU to prepare and deliver training sessions to improve Web Accessibility across the DOR's Community Based Organizations.

- Procurement process improvements that include collaboration with vendors to improve accessibility documentation and product improvements that are specified in the vendor contracts will improve the accessibility of EIT products for everyone.

- Published accessibility and training resources that are used by many institutions.

Overview of Major Challenges to Achieving Planned Results

Identify Major Challenges to Successful Implementation

- The depth and breadth of implementing the Accessible Technology Initiative across an enterprise as large, diverse, and decentralized as the CSU presented many challenges.
  o The ATI implementation started in 2007 and was the first effort of its kind in the US, many of the assumptions made at the outset of the implementation (e.g. setting unrealistic due dates, articulating dollar thresholds for accessible product procurements instead of assessing impact, focusing mainly on delivering tools and training instead of working to improve the business processes that surround the Web accessibility, procurement, and instructional materials areas) were not correct.
  o The CSU was faced with large budget cuts that resulted in dramatic staff reductions. The ATI staff was reduced from 6 employees to 2 in 2010. Campuses also suffered from staff reductions that impacted the personnel available to work on ATI implementation.
  o Devising a method to measure ATI progress across the system in order to choose priorities that address the most pressing challenging accessibility issues facing campuses.

- Just as the ATI program modified itsgoals and objectives, the goals and outcomes articulated during the early years of the grant needed to be revised and updated. Goals were rewritten and added and outcomes were added or removed based on lessons learned during the grant period.
  o The initial scope of the project was too broad. The heavy emphasis on collaboration with vendors, other educational institutions, and government agencies proved to be premature since these entities were in the early stages of developing their own accessibility programs.

- o The initial plan whichspecified that one Accessibility Testing Lab would do all the accessibility testing for the CSU system was flawed. The single lab approach was replaced by a collaborative multi-campuses approach that leveraged the accessibility expertise across the CSU system.

Discuss Efforts to Address Challenges and Resolve Problems

- The ATI continually evolved and refined the goals, objectives, and methods to meet the implementation challenges. In 2009, ATI collaborated with campuses to develop a set of success indicators designed to articulate the business processes that needed improvement in order to meet ATI's goals.This business process improvement exercise resulted in a self-assessment that campuses could use as a guide to integrate accessibility into their policies, business processes, practices, and procedures. A yearly reporting processcommenced in 2009/2010 Academic Year. The self-assessment continues to be used to report on campus progress towards the ATI goalsand gives the system the ability to collect and analyze systemwide ATI implementation data. This systemwide reporting system delivers the information necessary to choose implementation priorities based on quantitative feedback from the campuses.

- Leveraging campus accessibility expertise across the CSU system enabled the ATI to continue moving forward despite the staff reduction in the CO and across the campuses. Large systemwide projects addressed business processes deficiencies by providing generic solutions to common ATI problems. Contracting with campuses to provide additional accessibility support to campuses across the system proved to be a successful endeavor. Projects in Web Accessibility, Procurement and Instructional Materialsdeliveredprocess improvement strategies and high quality training resources that will support the ATI implementation for years to come.

- Developing relationships with vendors during the procurement process rather than establishing partnerships delivered the greatest number of accessibility improvement to products.

- Collaborating with other government agencies was a slow process during grant project but the relationships are continuing. In late 2011 the CSU was invited to conduct a series of Web Accessibility training sessions for the CA Department of Rehabilitation. CSU also collaborated with UC system to provide webinars for students with disabilities that covered strategies for effectively using assistive technology with electronic instructional materials and Learning Management Systems.

V.   Lessons and Recommendations

Summary of Lessons Learned

The most effective approach is a flexible one. Goals change over time as do operating conditions. Changing course when circumstances warrant is the smart thing to do. For example, in the initial grant period, focusing on training and tool development rather than the businesses processes improvements did not produce sustainable accessibility improvements. The multi-stakeholder collaboration in 2009 to identify the business processes that needed improvement resulted in a clearer understanding of the ATI implementation effort and a more effective implementation strategy was developed.
- Developing a quantitative report process that replaced the initial narrative reporting process gave the CSU much more accurate data that can be used to identify systemwide accessibility challenges that need to be addressed across all campuses.
- Efforts must balance the centralized with the systemwide. For example, having a single center to test products for accessibility systemwide proved impractical. Taking a more systemwide approach and leveraging campus expertise is much more practical in this case. This led to contracting with several campuses with complimentary accessibility expertise. Also, while cooperation and sharing is always important, it is vastly more so in tight budget times.
- Experimentation should be encouraged, and when projects results are less than hoped for, they should be viewed as course corrections or opportunities for course corrections rather than failures. For example, the

VPAT database and Wizard did not produce expected results, but the problems they revealed can and are being used to make the whole system more efficient and effective.
- Developing and deploying tools like the VPAT Database and the VPAT Wizard should be done to support business processes. In the CSU the VPAT Database was a good idea but the challenges (e.g. accuracy, timeliness, trust related to testing results) surrounding a centralized storage of VPAT's were not well understood so the tool was not successfully used over time. The VPAT Wizard tool suffered from lack of adequate requirements due to the inexperience of the CSU with integrating accessibility into the procurement process. The VPAT Wizard was never successfully deployed.

Recommendations

Recommendations for Expanding the Project in Region or Scaling Up Statewide

<u>The CSU ATI continues to identify opportunities for collaboration with other institutions.</u> The CSU is currently collaborating with accessible technology experts in the University of CA system to remediate a web-based math tutorial system, and in the CA Community Colleges to pilot a promising tool for accessible document conversion.

Recommendations to CETF Regarding Grants Management

The form used by CETF grant recipients to complete annual quarterly and annual reporting had several problems that made it difficult to use:
- While it is structurally divided into sections and subsections, it lacks headings or bookmarks that would allow users to quickly and easily navigate the document.
- It does not provide a data entry validation mechanism (e.g. a way to check that all required fields were completed or that the values provided were appropriate).
- It does not allow the user to see (or repurpose) the values/comments from the previous period at the same time that they are completing the new report unless they keep both documents open in separate windows.
- The document utilized a highly nested table structure that does not conform to web accessibility requirements or best practices.

We would recommend offering grant recipients a web-based tool to review, validate, and submit reports in an accessible manner. This would also make it easier for CETF to review and extract data for reporting purposes.

VI.   Grant Agreement Requirements

Purchased Equipment

No equipment was purchased with CETF funds.

CETF of Grant Funds

All of the CETF grants funds were expended.