Remediating Course PDFs and Why It's Important

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Submitted to:
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Abstract

This project describes a performance problem the faculty members of the Maxwell School at Syracuse University are having remediating their course PDFs and provides a prototype of an instructional solution for this problem.

Syracuse University requires that all online content be accessible to as many people as possible, regardless of ability or disability of a student. The proposed instructional solution is a five-part, instructor-led, 2-hour training session including a pre-training activity making faculty aware of the importance of PDF remediation, instruction on how to use the accessibility features of Adobe Acrobat, and hands-on activities for faculty which allows them to practice the skills they learn. A list of resources that will be secured or developed is included.

Overall, the goal is to make faculty aware of the struggles some students face when trying to understand course content and to give the faculty members the skills required to work with Adobe Acrobat, which will ensure the online PDFs for their course content are accessible to as many students as possible. The focus of the instruction is on vision disabilities.

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Instructional Analysis: Performance Statement

Problem statement

Many faculty members have not had students with disabilities in their classes, therefore, the need for accessible PDFs was not immediate. Faculty is unaware of the difficulties that students with vision problems face when using a screen reader that cannot relay the contents of course PDFs in a logical manner. Faculty members are not familiar with the accessibility tools found in Adobe Acrobat that are used to remediate documents. Faculty also have demanding schedules, so finding time to remediate all of their course PDFs has been challenging.

Competent performance

Faculty is willing to attend the training session provided by Maxwell ICT and master the skills of remediating PDFs. A student who must use assistive technology (such as a screen reader) to listen to course PDFs read to them will be able to understand the logic of the course content and participate in the course.

Performance Problem

1. Applying accessibility when initially creating the documents in Microsoft Word is best practice prior to turning those documents into PDFs. However, many of the original Word documents are no longer in existence, forcing faculty to remediate their PDFs directly in Adobe Acrobat. Applying accessibility through Acrobat can take many steps and most faculty members do not know how to do this.
2. Faculty have not attended a training session to learn how to remediate PDFs in Adobe Acrobat.
3. Faculty may not have had students with disabilities in their classes in the past, so they do not understand the importance of remediating PDFs.

Analysis: Audience & work/learning environments

Audience Profile

The faculty of the Maxwell School are college-educated with most holding PhDs. All faculty have, at least, basic keyboard skills and know how to open and save files. They teach students who come from many countries across the globe. Some faculty have not had students with vision disabilities in their classes, therefore, do not understand the importance of remediating course PDFs they put online. All faculty members use computers in their daily work but have varying skill levels.

Working Environment

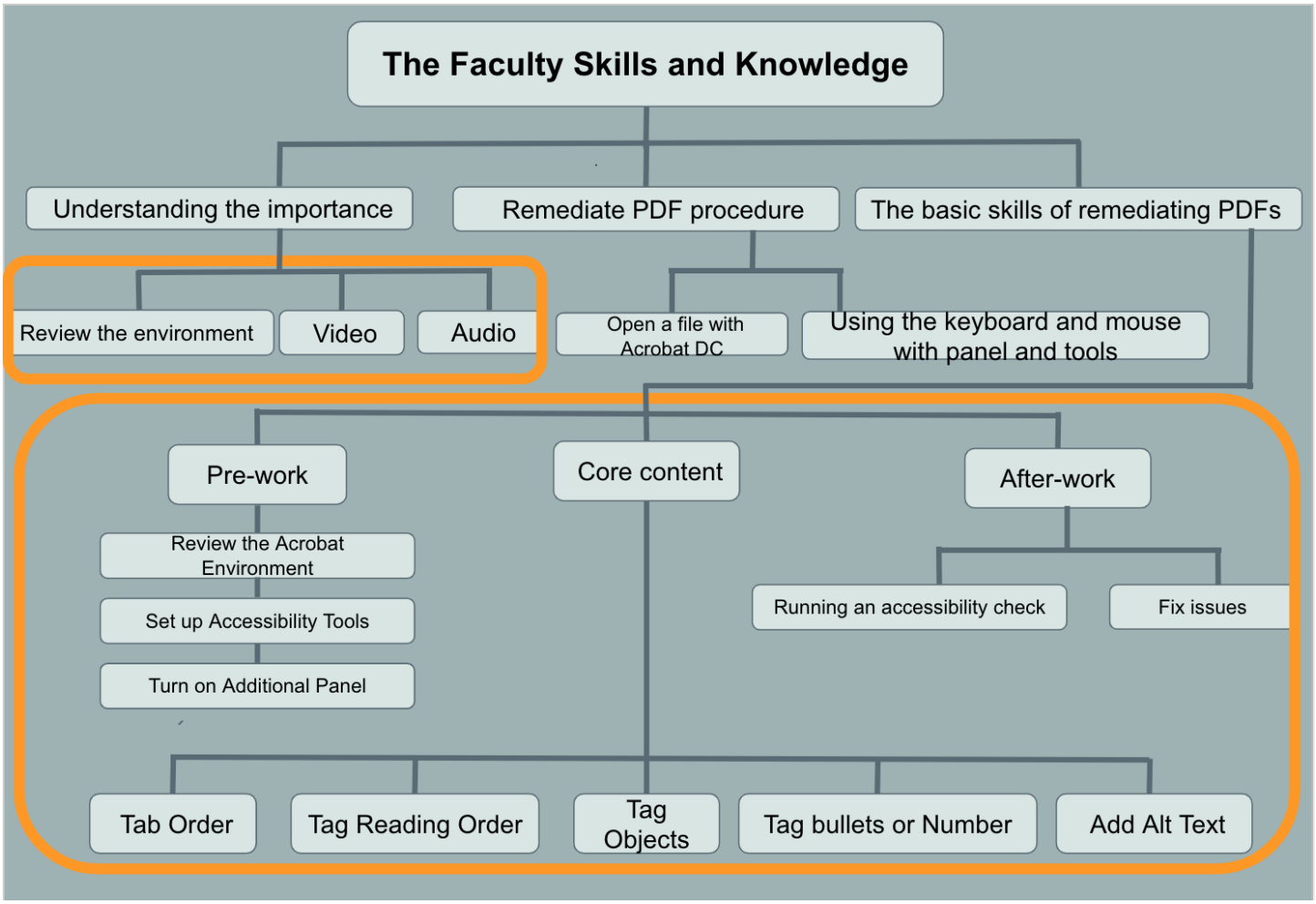
Syracuse University requires that all online content be accessible to as many people as possible, regardless of ability or disability of a student. The Maxwell School has offered training sessions on how to remediate PDFs for four years, however, most faculty did not attend the training. As of January 2018, all course PDFs that will be put online are required to have accessibility applied to them, therefore, the faculty must learn how to use the tools found in Adobe Acrobat to remediate their existing PDFs.

Learning Environment

The learning environment where faculty attend training sessions is one of two computer labs in the basement of Eggers Hall, which is part of the Maxwell school. One lab is a spacious room with twenty workstations, while the other lab is more intimate, with only eight workstations. Both labs are set up with the full Adobe Suite, the Microsoft Office Suite, and Internet access. The 20-workstations lab is equipped with a printer, a screen projector, speakers, and a blackboard. The smaller lab is equipped with a printer, and a blackboard. The computer labs are shared with students and will be closed to the public during training sessions.

Analysis: Content Analysis

The expected knowledge and skills of a competent faculty member includes understanding the importance of remediating PDFs and being able to remediate inaccessible PDFs by themselves. The diagram below shows those competencies with a breakdown of each. The instructional analysis suggests that the focus should be on the basic skills of remediating PDFs and understanding importance of PDFs remediation, which are squared by the orange lines.



Design – Content, Instructional Goals, Objectives, Assessments

Relationships among performance and content

Performance	Content
Having a positive attitude to taking PDF remediating training	Willing to spend time to take the training and actively engaged into the training.
Having a basic command of how remediating an inaccessible PDF.	Setting up accessibility tools, ensuing the documents can be tabbed correctly and can be read logically by assistive technology, ensuring the documents have reading order.

Instructional Goals

- To facilitate learners (Faculty of the Maxwell School) with the knowledge of why accessible PDFs used in their coursework is important.
- To facilitate learners (Faculty of the Maxwell School) in developing skills required to remediate course PDFs in Adobe Acrobat.

Learning Objectives

- Faculty members will be able to list at least three reasons why accessibility is important.
- Faculty will be able to list university sites available when they have questions about students with disabilities.
- Faculty will know what services the IT staff at Maxwell can provide if help is needed when remediating their PDFs.
- Faculty will be able to list at least two struggles a student with vision disabilities faces when they must use content that is not accessible.
- Faculty will want to make sure their PDFs are accessible to as many students as possible, regardless of ability/disability.
- Faculty will be able to list at least three problems associated with a document that has been remediated vs. a document that is inaccessible.
- Faculty will be able to turn on tools used when applying accessibility to PDFs.
- Faculty will possess the skills to tag and order headings, apply alternative text to images, and run a full accessibility check on PDFs.
- Faculty will be able to solve accessibility issues found by the software.

Relationships among goals, objectives, and assessments

Instructional Goal	Learning Objectives	Learning Assessment
To provide learners (faculty of the Maxwell School of Syracuse University) with information about the struggle's students with vision disabilities face when trying to understand course PDFs that have not been remediated	Attendees listen as instructor discusses the significance of remediated PDFs.	Faculty members will be able to list at least three reasons why accessibility is important.
	Attendees are shown a list of resources available to them after the training is over.	Faculty will be able to list university sites available when they have questions about students with disabilities; faculty will be able to list services that are available to them through the IT staff at the Maxwell School when remediating their PDFs.
	Attendees watch a video that interviews students with vision disabilities and what they struggle with when course content is not accessible. Attendees discuss what they have watched and how they feel going forward with remediation. Attendees listen to screen reader audio that reads to them an inaccessible document. Attendees listen to a remediated document. Attendees discuss the differences between the two documents and what the problems are with a PDF that has not been remediated.	Faculty will be able to list at least two struggles a student with vision disabilities faces when they must use content that is not accessible. Faculty will want to make sure their PDFs are accessible to as many students as possible, regardless of ability/disability. Faculty will be able to list the problems associated with a document that has been remediated vs. a document that is inaccessible.
Using hands-on training to help learners develop the skills required when using accessibility tools in Adobe Acrobat to remediate a PDF.	Review of Adobe Acrobat application and tools required to remediate PDFs	Faculty will be able to turn on tools used when applying accessibility to PDFs.
	Review of Adobe Acrobat application and tools required to remediate PDFs.	Faculty will be able to turn on tools used when applying accessibility to PDFs.
	Learn how to tag and order headings, apply alternative text to images, and run a full accessibility check on PDFs.	Faculty will possess the skills to tag and order headings, apply alternative text to images.
Solve accessibility issues found by the software.	Run a full accessibility check to find existing issues in a PDF.	Faculty will know how to perform a full accessibility check a PDF and fix the issues found.

Development: Storyboard Set

Title: Remediating Course PDFs and Why It's Important **Estimated Time**: 2 hours

Purpose: Train faculty members of the Maxwell School at Syracuse University on how to remediate course PDFs

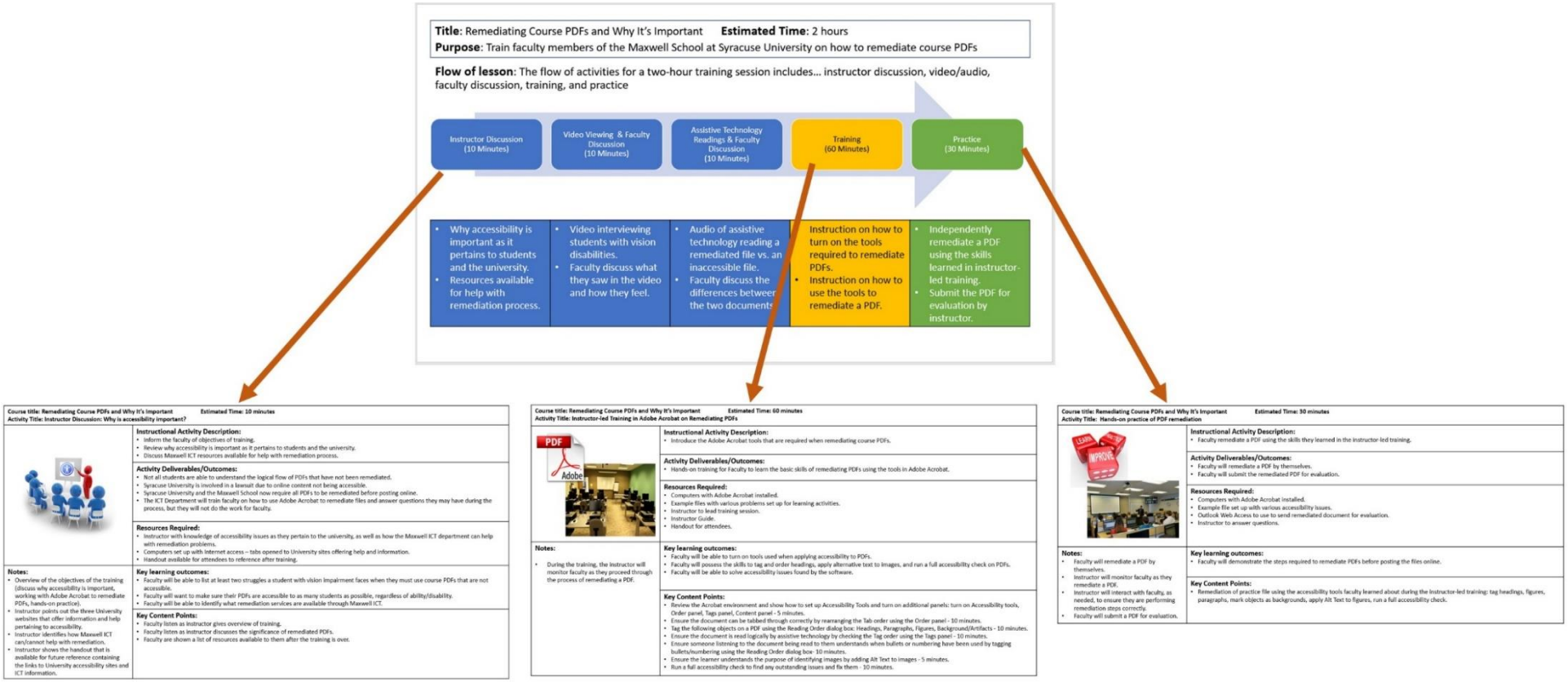
Context: This is an introductory training session for faculty of the Maxwell School on the basics of remediating course PDFs. Faculty can take this training as many times as they want during the time it is offered (within one semester). There will also be supplemental material available to reference after the session. The focus of the instruction is on students with vision disabilities.

Overview: This storyboard presents the flow of the activities for a two-hour faculty training session on the remediation of course PDFs. The session includes…***instructor discussion***…***video viewing with faculty discussion***…***assistive technology reading with faculty discussion***…***training***…***practice***. The ***instructor discussion*** pertains to why accessibility is important and what resources are available to faculty at Syracuse University to help them with the process. This is followed by viewing a ***video*** interviewing a visually impaired student, with a ***faculty discussion*** about what they learned. The Faculty will then listen to the audio of ***assistive technology reading*** a remediated file vs. an inaccessible file, followed by a ***faculty discussion*** about what they have learned. The next phase of the instruction will be an instructor-led ***training*** session on how to use the accessibility tools in Adobe Acrobat. The session ends with hands-on ***practice*** of PDF remediation by the faculty.

Expected Outcomes: Faculty will be able to list reasons why accessibility is important and where to find help/information when they have questions about students with disabilities; Faculty will be able to turn on tools used when applying accessibility to PDFs in Adobe Acrobat and will possess the skills to remediate PDFs (100 % of the time).

Resources: Computers setup with an installation of Adobe Acrobat and access to the Internet, video with focus on students with vision impairment, projector, speakers to hear audio, screen reader sample files, example files with various problems set up for learning activities, handout for attendees, Outlook Web Access to send remediated document for evaluation.

Stakeholders: Facilitator – trainer for faculty members; Audience – faculty members of the Maxwell School



Additional slides for first phase of instruction (indicated in blue above) can be found in the Appendix.

Implementation: Dissemination plan

Dissemination Method

The introductory training session for faculty on the basics of remediating course PDFs will be delivered at the Maxwell School in the Interactive Media Lab of Eggers Hall. This is a computer technology assisted learning environment that has Adobe Acrobat and the Internet installed on each computer. If needed, the training will be moved to the larger computing room located in Eggers Hall to accommodate a larger audience. This two-hour instructional training session will be implemented every Thursday afternoon at 4:00 pm, beginning the first month of the Fall semester. (Additional sessions will be added, as needed, to accommodate faculty who cannot make the Thursday afternoon sessions.) Faculty can take this training session as many times as they want during the time it is offered. After the training session, the Maxwell school will provide a survey to review how faculty feel about the training and gather suggestions and comments to improve the training.

In addition to the weekly workshop where faculty will discuss and solve problems pertaining to the remediation of PDFs, a handout will be available afterwards which contains instructions for the content covered in the training. Faculty can also send their problems and suggestions for the training via email to: training@maxwell.syr.edu. Faculty members will know they have support through review materials and the IT department at the Maxwell School.

Dissemination Personnel

The key stakeholders in this project are described below.

Maxwell School – The Maxwell School requires that PDFs used for online course content be accessible to as many people as possible, regardless of ability or disability of a student. Attending the PDF remediation training session will be a requirement related to a faculty member's annual performance appraisal, which will push the faculty to attend the training. The Dean's office of the Maxwell School is responsible for making the training sessions aware to faculty and following up to make sure they are attending.

Facilitators– The instruction will be delivered by the Maxwell School IT staff. Three IT staff members will be familiar with the training and can deliver it, as needed. One main instructor will implement the training in each scheduled session. There will be two instructors available to implement training when the main instructor is not available due to sickness or other duties. This will avoid the need to cancel a training session, which could affect the busy schedules of the faculty members registered for the training.

The instructor is primarily responsible for: setting up the classroom prior to the training, leading the accessibility discussions before, after and during each activity; implementing the step-by-step hands-on training in Adobe Acrobat using the newly-created instructions; providing support as faculty work on remediating PDFs independently; giving feedback immediately during the learning process; and evaluating the completed PDF sent to them by the faculty members during the independent practice session.

Faculty of the Maxwell School – Faculty are responsible for attending the training session and applying the skills they learn to their course PDFs. They will provide feedback about the training so that it can be revised, as needed.

Dissemination Challenges and Contingency Plan

Applying accessibility to PDFs in Adobe Acrobat can be time consuming and the steps to do so are not intuitive. Faculty are busy, and they have not attended the previous training sessions offered to learn how to remediate PDFs in Adobe Acrobat. Also, a Faculty member may not have had students with disabilities in their classes in the past, so they do not understand the importance of remediating PDFs. Support from the Maxwell School's Dean's office is critical in requiring Faculty to attend this training session. By providing multiple training sessions and supplying supplemental review material and sources to go to for help, Faculty will feel more supported and comfortable with the remediation process. By learning about accessibility through the discussion, viewing of the video, and listening to assistive technology read an inaccessible document, as well as a remediated document, the faculty will have seen and heard why accessible documents are important. As faculty remediate more PDFs, their comfort level with the software will be higher and, over time, the process will become intuitive and automatic.

Surveys will be provided after each training session to get feedback from faculty on ways to improve the training session. The training session will be reviewed at the end of each semester it is offered, then updated, as needed.

Evaluation: Formative and Summative Evaluation Plan, Cost Benefit

Overall Evaluation Plan

Formative evaluation

Information gathered from the faculty will include: a) Do the class activities help them understand the importance of PDF remediation? b) Does the training provide the resources to help them learn how to remediate a PDF? c) Does the training cover the basic skills of PDF remediation?

Information gathered from the instructor will include: a) Are the learning objectives of the training clearly stated at beginning of the class? b) Does the after-training practice target the training content? c) Is the training content accurate and up-to-date?

Component of instruction	Sample Evaluation questions	Instrument/protocol	Stakeholders providing data
Pre-training Activities (videos, screen readers)	Do faculty members have a better understanding of the struggles a disabled student faces when using inaccessible PDFs? Do faculty members understand the importance PDF remediation?	Group discussion	Instructor Faculty
Content presentation	Is the training content accurate and up-to-date? Are instructions clearly represented? Does the content flow in a logical manner?	Document analysis	Instructor Faculty

Component of instruction	Sample Evaluation questions	Instrument/protocol	Stakeholders providing data
Practice	Can faculty apply the training content to their course PDFs? Is the feedback provided from the instructor in a prompt and constructive manner?	Field trial One-to-one evaluation	Faculty Instructor

Summative evaluation

The ITS department of Maxwell School and the instructors will be evaluators of summative evaluation. The factors of the summative evaluation include faculty's attitude toward remediating all online course content and the faculty's ability to remediate PDFs. Submitting a PDF and a online survey will be evaluation instruments of the summative evaluation. After the training sections, faculty will turn in a remediated PDF for evaluation (the original PDF is not accessible). Two online surveys will be given - one in the middle of the semester and one at the end of the semester. The surveys gather feedback about how the faculty feel regarding making online content accessible and whether they think the training is useful. By doing so, the Maxwell School will know whether the training will be successful in increasing the percentage of accessible online course content.

Type of evaluation	Sample Eval questions	Instruments/protocols	Uses
Overall satisfaction Gaining faculty's feedback about the activities and the training content.	How do you feel about the content in the video and screen reader audio? How would you describe your level of engagement during this training?	Qualitative Survey	To determine whether the pre-training activities are informative and what improvements can be made.
Learning assessment The faculty's feedback after activities, performance during hands-on training, and remediation skills demonstrated in submitted PDF during practice phase.	Did 90% or more of the faculty participate in the discussions after watching the video and listening to the screen reader audio? Did 90 percent of faculty finished the after-training activity at an acceptable level?	Instructor's observation After training assignments	To determine whether the gap is closed.
Transfer Checking the percentages of accessible online course PDFs in the Maxwell School at the end of the semester	Are 95 percent of online course PDFs in the Maxwell School accessible?	The ITS departments of Maxwell will check those content.	To determine whether the majority online course PDFs are meeting the requirement of the Maxwell School.

Cost-benefit Analysis

Costs associated with implementation	Benefits associated with implementation
• **Instructors** The IT staff at the Maxwell School will develop and deliver the training, therefore, there is no external cost related to an instructor salary. Developing new training is part of the duties of the IT staff. Three IT staff members will have the knowledge and skills required to deliver the training at any time, in case a scheduled instructor is not available due to illness or other duties. • **Computer Room** The computer rooms are maintained by the IT staff of the Maxwell School; therefore, no external resources are required. • **Adobe Acrobat Software** Adobe Acrobat is included with the default applications provided by the University on all lab computers, therefore, no additional costs are associated with the software. • **Training Time** The faculty will have to provide two-hours of their time to attend the training session, which will run during standard University working hours (Mon - Fri. 8:30 AM - 5:00 PM) –time/days to be determined. • **Training material** Training material will be stored online so that faculty can reference instructions, as needed, therefore, no printouts will be supplied during the training sessions.	• **The Maxwell School faculty will acquire the skills to remediate PDFs.** • **The Maxwell School faculty will understand the importance of PDF remediation.** As PDF remediation is not intuitive in Adobe Acrobat, the time spent by the Maxwell School IT department developing the training for the faculty will ease the pressure of faculty trying to learn how to remediate PDFs on their own. • **Reduce the pressure of the IT department assisting individual faculty on PDF remediation.** As the faculty increase their remediation skills, less time will be required by the IT department to assist individual faculty, which results in more time for the IT department to spend on other projects. • **Reduced chance of additional lawsuits being filed due to coursework accessibility issues.** Because the Maxwell School will be in compliance with the university accessibility standards, the chances of additional lawsuits being filed by disability groups due to inaccessible course documents is reduced. • **Student will be accessible to online PDFs files.** • **Student will understand the course content.** Most students will be able to understand PDFs used for course content. The result of this is more student satisfaction, possibly leading to better grades. • **The Maxwell School faculty will get access to online resources on PDFs remediation efficiently.** Online reference material makes help and instruction available to faculty regardless of the time they are working on their files.

Cited References

[PCC Videos].(2015. Oct 1). *To care & Comply: Accessibility of Online Course Content* [Video File]. Retrieved from https://www.youtube.com/watch?v=eks3r-nE9lU
Available on request (Screen reader audio)
Clipart used in Storyboard (Creative Commons)
Instructor Guide – to be developed
Training Reference Handout – to be developed
Training Files – to be developed

Appendices – Other clarifying information

Additional slides for Storyboard – phase 1:

Course title: Remediating Course PDFs and Why It's Important **Estimated Time: 10 minutes**
Activity Title: Video Viewing & Faculty Discussion

Instructional Activity Description:
- Show Portland Community College video, *To Care and Comply: Accessibility of Online Course Content*.
- Discussion with faculty about what they learned in the Portland Community College video.

Activity Deliverables/Outcomes:
- Complete blindness is not the only form of vision impairment.
- Students do not want special help, they just want to be able to understand course material as clearly as sighted students.

Resources Required:
- Edited portions of Portland Community College video, *To Care and Comply: Accessibility of Online Course Content* focusing on students with vision disabilities.
- Projector
- Speakers
- Instructor to lead discussion.

Notes:
- The video will interview a student with a vision impairment who talks about the struggles he has when a PDF used in course content has not been remediated.
- The video is an edited version of an eleven-minute video, cut back to five minutes.
- Instructor will lead faculty in a discussion about what they saw in the video and list some of the struggles a student with vision impairment faces when using inaccessible documents.

Key learning outcomes:
- Faculty will be able to list at least two struggles a student with vision disabilities faces when they must use content that is not accessible.
- Faculty will want to make sure their PDFs are accessible to as many students as possible, regardless of ability/disability.

Key Content Points:
- Faculty watch a video that interviews a student with a vision impairment and what he struggles with when course content is not accessible.
- Faculty discuss what they have watched in the video and how they feel going forward with remediation.

Course title: Remediating Course PDFs and Why It's Important **Estimated Time: 10 minutes**
Activity Title: Assistive Technology Readings & Faculty Discussion

Instructional Activity Description:
- Attendees listen to assistive technology read two versions of the same document - one document is remediated, and the second document is inaccessible.
- Discussion with faculty about what they heard as the screen reader read back remediated and inaccessible files.

Activity Deliverables/Outcomes:
- Not all students are able to understand the logical flow of PDFs that have not been remediated, which makes learning course content difficult.
- There are many problems associated with Inaccessible documents.
- The logical flow of PDFs that have not been remediated can vary greatly compared to an accessible PDF, which clearly conveys the desired message.

Resources Required:
- Inaccessible documents and remediated document.
- Screen Reader software set up on computer where documents are stored.
- Instructor to lead discussion.

Notes:
- The inaccessible document has not been tagged and images have not had alternate text applied to them.
- Faculty are encouraged to take notes, as documents will be discussed afterwards.
- Instructor will lead faculty in a discussion about what they heard when listening to a screen reader read both documents.

Key learning outcomes:
- Faculty will want to make sure their PDFs are accessible to as many students as possible, regardless of ability/disability.
- Faculty will be able to list the problems associated with a document that has been remediated vs. a document that is inaccessible.
  - Inaccessible documents contain: confusing - ununiform tables, hyperlinks and abbreviations; no alternative text applied to images; groups of text that are read out of the intended order; no headings to introduce main topics.

Key Content Points:
- Faculty listen to assistive technology read an inaccessible document and a remediated document.
- Faculty discuss the differences between the two documents and what the problems are with a PDF that has not been remediated.

Final Report Checklist

Front Matter (2 pages)	Title page and Table of Content present Effective Abstract (good grammar, spell checked)
Analysis (½ page)	Required components present (problem statement, content analysis) Supporting graphics, charts, clear and accurate Section conforms to length guidelines Grammar, spelling, format check
Design (2 pages)	Required components present (instr. strategies, resources, assessments) Supporting graphics, charts, clear and accurate Section conforms to length guidelines Goals, objectives, activities, assessments align and address identified gap Grammar, spelling, format check
Development (4 pages)	Required components present Supporting graphics, charts, clear and accurate Prototype clearly demonstrates design of instruction Section conforms to length guidelines Grammar, spelling, format check
Implementation (1 page)	Required components present (dissemination plan) Supporting graphics, charts, clear and accurate Section conforms to length guidelines Grammar, spelling, format check
Evaluation (1 page)	All required components are present (formative/summative; cost/benefit) Supporting graphics, charts, clear and accurate Section conforms to length guidelines Grammar, spelling, format check
Appendices (End matter)	References section is BEFORE appendix A, in APA style Supplemental Appendixes referenced in body of report Supporting graphics, charts, clear and accurate in Appendixes Grammar, spelling, format check Final checklist attached after LAST appendix
Formatting Overall	All sections are written in a professional manner 12 pt Times New Roman font is used in main text (Calibri approved by Tiffany 11/19/18), (tables can be 10 pt) APA formatting is followed in citations Graphics and/or diagrams are used effectively Report is formatted into one file (pdf)
Overall Report Content	Performance problem is clearly described Analysis supports recommendation for instructional solution Instructional Design solutions address gaps identified in Analysis Development plan addresses Design specification Implementation plan aligns with Analysis and Design plan Evaluation plan aligns with instruction and performance problem Flow of messages among sections and performance problem are clear