# Subject Area Studies

# as a Means to Involve Faculty and Increase Accessibility

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Phyllis Petteys - Accessibility Specialist, Disability Services

Karen Sorensen - Accessibility Advocate for Online Courses, Distance Education

Angel Chesimet – Disability Counselor, Disability Services

***Portland Community College***

## Summary of Session:

Portland Community College has found subject area accessibility studies a rewarding collaborative effort that has many benefits. We will explain how the studies are funded, organized and conducted, and share results of our studies in Math, Computer Science, Geography and Communication Studies.

## Abstract:

Distance Learning’s accessibility team and Disability Services staff are not subject area experts and faculty are not accessibility experts. We will share how we have engaged faculty to examine a subject area and increase accessibility in their discipline. Two faculty are paid for one 10 week term to investigate, document, and develop best practices specific to the accessible online delivery of content in their subject area. The faculty are supported by the DL and DS staff. In the process, we have the opportunity to work together to examine accessibility and become better advocates for one another and for our students. As faculty learn to think about accessibility and become excited about it, they share findings with their colleagues and effect change in their disciplines.

## Introduction:

At Portland Community College, as at other colleges and universities, Distance Learning and Disability Services work to educate faculty about the importance of accessibility for students, and give faculty tools for improving the accessibility of their courses. DL reviews courses and meets with faculty, and DS consults with faculty when there is an individual accommodation. Information on websites and face to face training is also offered, as well as presentations on Universal Design for Learning to faculty groups. But we’ve found that engaging faculty by asking them to take the lead and study their discipline’s course materials is a unique and important way to improve accessibility for students. Rather than focusing on compliance, the studies give faculty the room to think more broadly and to formulate ways to teach to all students.

Subject Area Studies (SAS) came into being with the realization that Distance Learning’s accessibility team and Disability Services staff are not subject area experts and faculty are not accessibility experts. In fact our first SAS, in math, came about because math faculty approached us to help them make their courses accessible. From there, we developed a mechanism for conducting SAS. Two or three faculty members from a discipline are paid for one 10 week term to investigate, document, and develop best practices specific to the accessible delivery (both online and face to face) of content in their subject area. The faculty is supported by the DL and DS staff, and the group meets either in person or online weekly to discuss barriers and brainstorm solutions. We also bring in end users for consultation. In the process, we have the opportunity to work together to examine accessibility and become better advocates for one another and for our students. As the faculty learn to think about accessibility and become excited about it, they share findings with their colleagues and affect change in their disciplines and change attitudes toward teaching students with disabilities.

To date, there have been four SAS--Math; Computer Science, Computer Information Systems and Computer Application Systems; Geography; and Communication and Journalism. Each time, we found that faculty were skeptical about achieving accessibility in their discipline, and yet they were able to gradually envision the possibilities and continue, after the conclusion of the studies, to be a voice for accessibility. It is important to note that faculty are paid (at PCC it’s the special project rate) for their participation, and that paying faculty in such a study is critical to its success. Each study resulted in a report of best practices for accessibility that are posted on [PCC’s Accessibility for Online Course Content site](http://www.pcc.edu/resources/instructional-support/access/).

## Math:

Our first SAS, conducted in 2012, demonstrated that the studies can result in on-going accessibility efforts and advocacy by faculty. The instructors continue to promote the use of WeBWork, an open source, accessible online homework site and articulate the need for equally effective materials (such as tactile graphics) when needed. They have become a voice when talking to publishers as well. One of the big takeaways of the study is that not all students who are blind learn math the same way. They also applied a guiding principle in teaching math, the rule of four, and applied it to the study. The rule of four says that when a concept or idea is introduced and discussed, to communicate it in four ways:

* algebraically
* numerically
* verbally
* graphically

The challenge is then used to determine how to present these concepts to students with disabilities as is discussed in the [full study for math](http://www.pcc.edu/resources/instructional-support/access/SubjectAreaStudiesMath.html).

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## Computer Science, Computer Information Systems, and Computer Application Systems:

At our first meeting with the CS, CIS, and CAS group for the SAS, the faculty expressed doubt that a blind student could take their classes. It took only a few minutes for an end user to demonstrate use of screen reader in Word (a CAS application). Faculty from CIS then taught her how to write code, and she wrote her first program within a matter of minutes. Energized by the realization that it may be the way the subject is taught, not the discipline itself that provides barriers to students, the faculty looked at how they presented information and also developed a rubric to assess whether a programming lab is accessible to blind students. The [rubric](http://spot.pcc.edu/~mgoodman/DL/rubric.php) lists a set of standards that can play a role in making programming labs accessible.

Geography:

Geography tends to be a very visual discipline, consisting of maps, technology such as GIS, photos, videos, histograms, etc. The faculty in this SAS came up with several recommendations for teaching the subject to students who are blind in their [report](http://www.pcc.edu/resources/instructional-support/access/documents/BestPracticesforGeography.pdf). But further, the faculty saw that some of the solutions, such as mind map concepts and tactile graphs, can be great exercises for all their students.

For a Social Geography class, we discussed an image the instructor uses in her classes. The image shows a man walking by some water, and she asks students to conclude information about what the components of the image tell us. There was discussion that an alt text might “give away” what she is trying to teach, but just as faculty want the students to think more broadly and not jump to conclusions, the description of the image can contribute to this method of teaching. One idea was to have several students describe the image, as everyone will have a different perspective.

For this SAS, we brought in a student who is blind and majored in Ecology at a four year college. He took several Geography classes, and had taken classes that taught GIS even though the primary GIS software program in use is largely inaccessible. The student described how he uses maps, and that he can extract data to an Excel spreadsheet and make connections that other students may not make. The faculty also discussed tactile maps, and said a good map for anyone is one that does not try to show too many features--so in a sense the guiding principle of a tactile map works for other maps.

**Communications and Journalism:**

[The Communications and Journalism SAS](http://www.pcc.edu/resources/instructional-support/access/documents/BestPracticesforCommunicationFinalReport.pdf) looked at visual elements and auditory elements in a class and incorporated feedback from blind and deaf end users. The faculty realized that it can work well to give students choices for assignments, and to broaden existing assignments. They compiled a guide for best practices for assignments and classroom activities, For example, an exercise for describing “what you would see” if you sat down in a mall, was expanded to include all the senses. When looking at creating assignments, they ask their colleagues to consider: “Would a student with a visual or hearing impairment have the same accessibility to the assignment as the rest of the class?”

The faculty also delved into assessing publisher content used in their courses, especially interactive content, and saw first hand (from end users) barriers with the publishers they use in their department. They were able to talk with the publishers about their concerns, which puts pressure on the publishers to continue to make improvements with regard to accessibility.

A nice result of the study is that the faculty talked about including disability studies concepts in their classes, including discussions on the portrayal of people with disabilities in the media, including the history of the stereotypes when portraying people with disabilities, as well as pointing to positive examples that break traditional stereotypes.

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## Conclusion:

A faculty member from the Communication and Journalism study wrote in a blog post after the study:

The Communication and Journalism Subject Area Accessibility Study was one of the most beneficial professional development projects I have been a part of….What we were able to do in this study was to look at our courses through the lens of accessibility and make necessary suggestions and revisions to the way we teach.

One important take away from this study is in our course design. Many times, when receiving an accommodation request from PCC Disability Services, an instructor may feel they have to scramble at the last minute to try and develop an assignment or multiple assignments for the student. We can now take more of a holistic approach to our teaching to accommodate all student learners rather than waiting for an accommodation request. Instead of a reactive approach to accommodations, we can be proactive in developing and revising our courses so that we meet the outcomes of the assignment, course, and PCC’s core outcomes. If we can revise assignments and teaching strategies, then we have tools in place that will assist in our teaching and meeting the needs of all our students. ([Blog post for Distance Education](http://www.pcc.edu/about/distance/2016/08/accessibility-study-experience/)).

We have found that there are multiple benefits to conducting subject area studies. It has been extremely gratifying to see instructors become advocates as they learn more about accessibility. The instructors become a valuable resource for our departments because they talk to their colleagues about accessibility, which increases the strength of the message. But also, they develop reports with recommendations for their subject area, which we would never be able to do since we are not subject area experts.

We also find that we can count on the faculty involved in the studies to support students with disabilities. For example, recently a student who is blind arranged to meet with our CIS and CS instructors about challenges he is finding in his classes. We often will consult with one of the faculty from our studies when a situation arises. One of the instructors who participated in one of the studies has since joined PCC’s AT Committee, and it is really important to have a committed faculty voice on college wide committees. The instructor has also worked on an accessible wayfinding project. Math faculty at PCC have become leaders in at the college as well as nationally by advocating for greater math accessibility. And faculty involved in all the studies either have or intend to share what they learned at national conferences.

SAS not only help increase accessibility for students with disabilities, but also increases awareness of disability issues and reinforces the idea that disability is natural to the human condition, and that inclusion and full participation are a matter of social justice (from [project shift](http://www.projectshift-refocus.org/)). Early on in a study, a faculty member asked if the goal was for students with disabilities is to just pass the class, and we discussed that the goal is not just that the student can pass, but that it is possible (with approximately the same effort as any other student) to meet all of the course outcomes and achieve an A. The statement (rather bravely put out by the faculty) illustrates where many faculty start when thinking about making coursework accessible.

We feel that the SAS benefits all students, not just those with disabilities. By thinking about their disciplines in terms of accessibility, the faculty naturally began to think about how to expand the material they use and examine their teaching to encompass all learners. Faculty often comment that they want to use what they learned in all aspects of their classes, for all students.