

Tech-ing Your Way to a Functioning Presentation System

Job Aid Report

Introduction

Many of the instructors using Smart Classrooms (classrooms that utilize multimedia and computer equipment) at San Diego State University (SDSU) frequently encounter computers that appear to be unresponsive/frozen when trying to set up their presentations in these rooms. In a given week, 10 out of 21 call logs to my help phone line were from instructors unsure of what to do in order to get the computer up and running. Additionally, 9 of these 10 calls were from classrooms using newly installed Mac Mini computers (Smart List, 2009).

After conducting a performance analysis, it was shown that 83% of users interviewed did not know how to actually restart the frozen Mac Mini and 67% of these said it was due to being unaware of where the Mac Mini power button was. Since the skill/knowledge barrier of not knowing the steps in restarting an unresponsive computer is a major problem, a job aid with clear step-by-step instructions on how to troubleshoot this scenario is most beneficial.

Analysis Techniques

In order to obtain accurate data, task analyses and a performance analysis were conducted with actual users of the Smart Classrooms that use the Mac Mini computers. They are the intended audience of the job aid so obtaining their feedback is critical in determining its effectiveness. Also, an Information Technology Services (ITS) Smart Classroom Facilitator and Equipment Systems Specialist were consulted on proper use of the classroom podium equipment. Other ITS information available online, including diagrams and photos of the classroom podiums, and an online classroom scheduling database were also consulted to determine the appropriate size and format of the job aid.

Objectives

Given an unresponsive computer and this job aid, and such that the instructor will have a functioning system by the start of class time, the Smart Classroom instructor will be able to:

1. Set the keyboard/mouse switcher to either PC or Mac
2. Locate the monitor's power light indicator to determine if it is ON or OFF
3. Locate the computer's power light indicator to determine if it is ON or OFF
4. If computer's power light is OFF, turn computer ON by pressing its power button
5. If computer's power light is ON, tap the keyboard or move mouse to wake it from sleep mode.
6. If computer's power light is ON and still unresponsive, restart it by pressing and holding its power button for five seconds, then proceed to turn it ON by the same button

Job Aid Media

The step format is used for this job aid, as the objectives involved are a series of sequential steps. It needs to be available to the users at the Smart classroom podium so therefore it is a printed hard copy posted near the control panel of said podium to be referred to during a user's class time. Other media formats, such as online, were not considered as the problem here is with nonresponsive computers, so they can only resort to a hard copy.

The users are previously trained on the classroom equipment so therefore they are familiar with the various equipment terminology used in the job aid, as well as with such

documentation being in the podium since there are similar ones posted for various other tasks.

Job Aid Design

Space is limited within the podium so the job aid must be compact enough to fit in approximately a 4.5in x 6in. area. The blue and red color scheme was chosen to keep uniform with the color scheme of other ITS job aids posted. The final job aid would be laminated and secured in the control panel area.

Immediately the phrase “FROZEN COMPUTER?” in red jumps out at the top of the job aid to quickly draw the user to it for reference. The step format allows for easy to follow step-by-step instructions that contain photos next to most steps to give users an easy visual reference. The photos were taken at an actual Smart Classroom podium that uses the Mac Mini computers. The ITS Classroom Facilitator was consulted to ensure the correct buttons and devices were photographed. Each step on the job aid covers the optimal that users need to perform to get the computer functioning. After each step, if the computer is not up and running, the user goes on to the next step and so on until they see a working computer.

Pilot Test

I chose three faculty members who use the various Smart Classrooms on campus to pilot test the job aid. After checking room availability online (SDSU Room Scheduler, 2009) I was able to schedule each user’s test in the same Smart Classroom – PSFA 310. I felt it was important to have the exact same setup and equipment for each test to avoid any errors due to different environments. Before the tests I placed the job aid by the control panel. Then, to create a problem environment, turned on the PC then switched back and forth on the mouse switcher enough times to cause the PC not to recognize it anymore. This simulates a frozen computer. The users were each instructed to unlock the podium and get it setup as if for a real class, knowing ahead of time they were going to encounter a problem and some type of guide would be available to them for assistance.

All three users did notice the job aid and remarked the large red font was hard to miss. One of the users felt that the steps had him jumping around a lot, from computer, then to monitor, and then back to computer which was confusing for him. All three users seemed to spend a large amount of time looking at the photos and when asked if there was a problem they said it was difficult to tell which photo belonged to which step. All three users did successfully make it through steps one through five (they looked for the light on step five but the instructions did not apply as it was on), yet only two of the three successfully completed step six. That third user mentioned that it was not clear to her where the power button was based on the instructions in the step. She said that if the job aid had told her somehow that the PC button on the control panel WAS the power button she would have associated that with the picture much easier.

Pilot Test Interpretations and Revisions

While the photos were meant to guide the users to the correct buttons and equipment more quickly, it was apparent they were just slowing the users down. They need to be incorporated so the user can quickly identify which photo goes with which step and therefore be able to have the system up and running in less time. Also, after one of the users mentioned a possible problem with the order of the steps, I realized it would make more sense to switch a couple of them around to make the transitions to each step smoother. For example, it would make more sense to put the step involving the monitor before the steps involving the computer. Since the monitor is only involved once, might as well get it out of the way in the

beginning so the users don't have to go back and forth. Finally, since not 100% of the users completed the final step, it needs to be clarified even further that the control panel buttons also serve as the computer's power buttons. Based on these interpretations the following revisions were made to the job aid:

- Add the corresponding numbered step to each photo
- Switch steps 2 and 3 to minimize going back and forth from monitor to computer
- Switch steps 4 and 5 since step 4 wouldn't even apply if the computer is off
- Add a note near step 6 to clearly show where the power button is
- Revise step 6 to simplify the restarting process

Solution System

This job aid is part of a larger solution system aimed at reducing the number of problem calls related to frozen or unresponsive computers in new Mac Mini rooms.

Driver/Barrier	Solution	Justification
Skill/ Knowledge	<ul style="list-style-type: none"> • Job Aid • Provide Supplemental Training to Users on New Equipment Installations 	<ul style="list-style-type: none"> • A job aid, with photos, listing the optimal steps for restarting a frozen Mac Mini computer will aid them in class • Also, attending a training session to learn about the key changes made to the equipment will help them avoid "surprises"
Environment	<ul style="list-style-type: none"> • Provide more explicit labeling on computer equipment • Send email with photos of any equipment changes to all instructors of that Smart Classroom 	<ul style="list-style-type: none"> • ITS will create and implement labels with clearer verbiage, such as "Power On" to denote power button. • Email notification will clearly state and show what changes they can expect in the classroom
Motivation	<ul style="list-style-type: none"> • Explain to instructor during supplemental training the consequences to them not learning proper performance (i.e. loss of class time, decreased student attention) • Job aid applies here as well 	<ul style="list-style-type: none"> • Reminding instructors of their motivation to learn during their training will help them take the extra time to study new equipment. • Having the job aid will increase confidence as they will have guidance in class and not have to rely on memory
Incentive	<ul style="list-style-type: none"> • When assisting the instructor in their class, ask to take them aside for a few seconds to demonstrate how to go about solving the issue, instead of just fixing the problem for them 	<ul style="list-style-type: none"> • Performing the task for the instructor is a flawed incentive. It prevents them from learning what to do to perform as desired. Insisting they follow along will help them learn

Appendix – References

Websites:

Spring 2009 Smart Classroom List (2009).

Retrieved February 20, 2009, from Instructional Technology Services – San Diego State University: <http://its.sdsu.edu/docs/SmartClassroomSpring2009.pdf>

An Inside Look at the 2008 Smart Classroom Cabinet (2008)

Retrieved February 24, 2009, from Instructional Technology Services – San Diego State University: <http://its.sdsu.edu/multimedia/cabinet/index.htm>

Room Scheduler Web Client

Retrieved April 19, 2009, from SDSU's Room Scheduler – San Diego State University: <http://pluto.sdsu.edu/astraweb/>

FROZEN COMPUTER?

If the computer is unresponsive, follow these steps:

- 1** Set the keyboard/mouse switcher to PC or MAC.
- 2** Locate the computer's power light indicator to determine if it is ON or OFF.
- 3** Locate the monitor's power light indicator to determine if it is ON or OFF.
- 4** If computer's power light is ON, tap the keyboard or move mouse to wake it from sleep mode.
- 5** If computer's power light is OFF, turn the computer ON by pressing its power button on the panel.
- 6** If computer's power light is ON and still unresponsive, restart it by pressing and holding its power button for 5 seconds, then proceed to turn it ON by the same button.



Job Aid—Pilot Test

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- 5** If computer's power light is ON, tap the keyboard or move mouse to wake it from sleep mode.
- 6** If computer's power light is ON yet still unresponsive, RESTART by:
 - pressing and holding power button for 5 seconds to turn OFF
 - then press same button once to turn ON computer



NOTE:
The computer source buttons on the control panel are ALSO the power buttons!