Universal Design and Adaptive Equipment: Ideas and Solutions for Music Schools

Rebecca Morris

[1] Universal design and adaptive equipment are important concepts for all public facilities, including music schools. In what follows, I will explain what those terms mean and explore some applications in the academic environment we share as students of music and as musical scholars.

Universal Design

[2] Universal design is a term referring to "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design"[1] This concept goes beyond the familiar notion of "disabled accessibility," enshrined in the Americans with Disabilities Act. For disabled accessibility, you can have a wheelchair ramp next to a set of stairs. With universal design, you have no stairs to the entrance at all. As a result, everyone can use the same entrance—that's the "universal" in universal design.

[3] The North Carolina State University Center for Universal Design has an excellent website at http://www.design.ncsu.edu/cud/, which lays out the principles of universal design. These include: (1) equitable use, (2) flexibility in use, (3) simple and intuitive use, (4) perceptible information, (5) tolerance for error, (6) low physical effort, and (7) size and space for approach and use. Let me discuss these seven principles one by one, and suggest some ways in which each might be realized within a school of music. *Equitable use* would include a floor-level entrance, ramps with handrails up to stages, and elevators which do not require a key to operate, available for all to use. In addition to helping people whose mobility is impaired, these design elements can benefit cellists, double bassists, and harpists.

[4] *Flexibility in use* would include knobs on a piano bench so that people of drastically different heights and people with back problems could use them. Likewise, music stands should be adjustable to the full range of height.

[5] An example of *simple and intuitive use* is power doors that automatically open, rather than having to press a button, the location of which may or may not be obvious. As with the examples of equitable use above, such a feature is helpful to people whose mobility is impaired by musical equipment as well as by biology.

[6] *Perceptible information* usually refers to large print, Braille, and what is called "redundant cueing" (meaning instructions are available for multiple senses to help those who are blind, deaf, or both). In music libraries the instructions for playing recordings are not always clear and consistent, so people who are not there frequently need this sort of help. Music libraries

and orchestra libraries should endeavor to keep Braille music in their collections as much as possible.

[7] A good example of *tolerance for error* is the "command-Z" or "undo" command available in much computer software. This feature should be available on all music software! This concept is also important for electronic hardware; some types of equipment, especially microphones it seems, are so sensitive that their tolerance for error is too low for a person who has any kind of physical anomaly. Those who are responsible for buying electronic equipment should keep this factor in mind when selecting it.

[8] *Low physical effort* is reasonably self-explanatory: environments should be designed to demand as little bodily exertion as possible. Easily-turning casters on pianos would be a simple illustration of this principle.

[9] *Size and space for approach and use* might imply having wide doors, keeping things at floor-level, or using ramps, rather than stairs, when possible. Libraries need to make sure to offer and to advertise assistance in physically reaching items. For example, at one library, I found it difficult to lift a heavy academic book after a hospital stay and was not readily offered help with it. Listening bays must be accessible, whether in the library or classroom, and there needs to be space in classrooms, libraries and other areas for wheelchairs and walkers to turn around.

Adaptive Equipment

[10] Adaptive equipment is simply something a musician can use to compensate for difficulty in performing a particular motion or task. It is a good idea for music schools to have some types of adaptive equipment on hand in order to be inclusive. In what follows, I offer a few illustrative examples.

[11] At http://www.kayjae.com, for example, one can buy a drum practice pad that is adjustable and designed to be used while sitting in a chair or wheelchair. The manufacturer advertises that it is useful for paraplegic musicians and for those with any sort of back problem.

[12] The foot-pedal stool for pianos, which raises the pedals higher for pianists with short legs (see http://www.cpsimports.com/foot_pedal_stool.html), may be more familiar. It can be used by children, which is the advertised purposed, but it can also be used by adults who are Little People.

[13] It is not likely that a music school would want to keep adapted woodwind instruments around because the adaptations are specific to the musician's particular impairment. The general principle is that if a musician, for whatever reason, does not have the use of one or more fingers, that lack of a finger can be accommodated with a thumb extension; the instruments themselves are specially made, however. An example can be found at the website

http://www.lawrence.edu/dept/conservatory/studio/flute/ew_flute.shtml.

[14] Of course, as scholars we are especially concerned about writing papers, so voice recognition software is useful, though imperfect. Dragon Naturally Speaking is the best known, but there are others. At universities, the disability accommodations office may have such software available for the use of students at least, and a faculty member could ask for it as an accommodation from the department. Likewise for musical examples, there are ways to input MIDI without a keyboard, for example with a wind controller. Disability offices and music schools should be encouraged to have that equipment and software on hand as well.

[15] The field of adaptive equipment for musicians is fairly *ad hoc* at the moment. So for now, if you, a student, or a colleague are in need of some specialized type of equipment, your best bet is to check the websites mentioned previously. The following sites may also prove helpful:

http://www.vsarts.org/x1022.xml#music and http://www.disabled-musicians.org.

It is my hope that, with greater awareness of disability in music, the field will grow so that there will be accepted equipment that is standard for all music schools and departments to have for their students, faculty, and staff to use.

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Footnotes

1. This quotation is from Ron Mace, the architect and designer who founded the Center for Universal Design at North Carolina State University.
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