

**Important Components of Teaching Spaces in University Facilities**

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## Introduction and Theoretical Framework

Proper facilities are vital to effective instruction (Shoulders & Myers, 2012). Facilities provide space, technology, utilities, and furnishings needed to conduct teaching and learning (Twenter & Edwards, 2017). Through generous supporters, the Ferguson College of Agriculture at Oklahoma State University (OSU) is preparing to construct a new flagship building. Project personnel, including building architects, designers, and university representatives were interested in gathering stakeholder input from faculty, staff, students, and alumni/supporters. The findings of this study will extend beyond the specific project at OSU to provide insight to important components of learning spaces to peer institutions.

Rogers' (2003) diffusion of innovation theory provided the theoretical foundation of this study. A prominent theory in innovation research (Sahin, 2006), Rogers (2003) proposed five stages of the innovation process for organizations. This study focused on the restructuring stage of the model in which the innovation has already been chosen to address an identified problem in the organization. In this case, the new building is the innovation set to solve issues related to current facilities. Rogers identified this phase as typically short in duration where "both the innovation and the organization are expected to change, at least to some degree" (p. 424). This study is associated with the second research priority of The American Association for Agricultural Education (Lindner et al., 2016). The purpose and research objective were to describe the components of classroom spaces which were important to university faculty and students.

## Methodology

A Qualtrics survey was developed with input from project personnel. Items were populated based on participants' role as a teaching faculty, graduate teaching assistant (GTA), or student. The instrument consisted of Likert-type items and open-ended responses. Likert-type items were used a 4-point response scale (1 - Not Important, 2 - Somewhat Important, 3 - Important, and 4 - Very Important). Face and content validity were established by a panel of project personnel and social science experts. Post-hoc reliability tests reported a reliable instrument with Cronbach alpha statistics of 0.89 for faculty and 0.96 for students (Warmbrod, 2014). Participants were recruited through email and social media. University listservs were used to invite faculty and students to participant. Social media posts were made across OSU platforms. Multiple invitations were sent during a two-month period. After data collection, responses were imported into IBM's Statistical Package for the Social Science version 23. A total of 287 useable responses, those with at least one completed item, were collected. Of those, 60 were faculty (20.91%) and 227 were students (79.09%). Descriptive statistics in the form of means and standard deviations were used to analyze Likert-type items (Boone & Boone, 2012). Open-ended responses were analyzed for common themes.

## Findings

The research objective sought to determine important components of classrooms from the perspectives of teaching faculty and students. As shown in Table 1, teaching faculty and students held similar importance rankings for components of general classrooms. Teaching faculty and students indicated video and audio capture was very important. They also valued the *ability to darken room* and *white boards on multiple walls*. *Multiple projection surfaces* as well as

*moveable furniture* were important to very important to teaching faculty. *Instructor's tables* and *confidence monitors* were of less importance than other items on the instrument. In their open-ended responses, teaching faculty wanted to ensure *projection screens would not cover whiteboard surfaces* in the new building. Students were more concerned with *adequate desk area* and *walkways free of student belongings*.

**Table 1**

*Important Components of Classrooms*

Classroom Components	Teaching Faculty ( <i>n</i> = 60)		Students ( <i>n</i> = 227)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Video and audio capture	3.53	0.72	3.48	0.70
Ability to darken room	3.32	0.85	3.33	0.80
White boards on multiple walls	3.25	0.99	3.18	0.88
Multiple projection surfaces to display multiple images simultaneously	3.23	0.89	3.22	0.79
Moveable furniture that can be rearranged	3.12	0.89	2.88	0.96
Instructor's table in addition to lectern	2.93	0.87	-	-
Confidence monitors	2.75	0.96	-	-

*Note.* 1 - Not Important, 2 - Somewhat Important, 3 - Important, and 4 - Very Important

### Conclusions, Implications, and Recommendations

Classrooms are vital spaces for pursuing the teaching goals of an institution (Fagbohunka, 2017). Interestingly, teaching faculty and students exhibited very similar rankings of importance of classroom components. Both groups considered video and audio capture capabilities to be the most important of the items investigated. As this study was completed during the hybrid learning model in the Fall 2020 semester, the need to teach in-person and online students simultaneously may contribute to this finding. Students also indicated a need for integrated audio and video technology. As students integrate new technology, so should their learning environments (Goodyear, 2020). Visual aids were important to teaching faculty and students. Both groups rated highly the ability to darken the room and the availability of multiple whiteboards and projection surfaces to be important in classrooms of the new building. As visual aids can dramatically increase student comprehension and retention (Dolati & Richards, 2011), project planners should accommodate a variety of visual aids in classroom design. Flexible furnishings were rated as important by both teaching faculty and students. Teaching faculty and students prefer the ability to modify the learning environment to best fit the day's instruction. Magney and Sorenson (2011) stated 21<sup>st</sup> Century learning environments are adaptable to meet students' needs. Project planners should accommodate group work and include a variety of furnishings throughout the new building. Confidence monitors, screens at the rear of the room, were of least importance to teaching faculty. If budget constraints restrict the project, these components would cause the least disruption for teaching faculty.

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