

ANALYSIS OF FALL 2014 UTILIZATION OF CLASSROOMS AND TEACHING LABORATORIES

Introduction

In the North Dakota University System (NDUS) master planning conducted during the first half of 2014 and in a June 2014 presentation to the North Dakota Legislative Branch Higher Education Funding Committee, the consultant noted the physical master planning that has been done on a campus-by-campus basis did not address information regarding the utilization of instructional spaces, the amounts of space and the application of space guidelines, and the use of benchmark data from similar institutions to provide context to the needs analysis. Therefore, NDUS undertook a significant effort from each of the campuses to create a room-by-room facilities inventory.

The fall 2014 enrollment data and an authorization to proceed was provided in January 2015. Subsequently the consultant undertook the process of analyzing enrollment data and room inventory information needed for this report.

Executive Summary

Overall, NDUS classroom and teaching laboratory space utilization is below recommended utilization targets of 30 hours and 20 hours for classrooms and teaching laboratories respectively, with a broad variation between all 11 institutions. Insufficient or incomplete data contributes to the low utilization, including: information on distance learning sections, information on professional school utilization, TrainND data, documentation of laboratory sections, and room code selection. In addition, a lack of classroom and teaching laboratory seat count information provides an incomplete utilization picture, as the classroom and laboratory capacity is not available.

Proposed Statewide Analysis

NDUS has indicated that it intends to conduct statewide analysis that will include the consultant analyzing all of the educational and general space, and providing space metrics for each major category. In addition to classrooms and teaching laboratories, the other space types to be measured include research facilities; academic and administrative offices; the library and study spaces; and other special use, general use, and support activity spaces that fall within the educational and general facilities supported by the state. These are coded as Type I and Type II by NDUS. The consultant recommends appropriate benchmark institutions to the size, location, and educational mission of each of the NDUS institutions be determined and applied to allow more clarity as to the types of space needed for a specific mission at a particular size.

The consultant believes this space analysis is now a more critical component than completing the deferred maintenance analysis, which should still follow the space needs studies. This process can provide NDUS and the State of North Dakota with better measurement tools to evaluate the capital needs of the NDUS.

Classroom Utilization

The average weekly room hours for the 665 classrooms across the system is 21 hours per week for scheduled courses. This is less than the traditional target utilization level of 30 hours per week, which has been widely used in higher education over the past 50 years. North Dakota State University, with 28 average hours, was the highest. The University of North Dakota and Dakota College at Bottineau both exceeded the average. Williston State College had the lowest average because half of the rooms now coded as classrooms showed no use in the PeopleSoft/Ad Astra course information. If only the rooms with use are counted, the WSC average would increase to 24 hours per week.

Approximately seven percent of the classrooms show no utilization. As a quality control measure, the NDUS facilities staff and the consultant solicited input from each of the institutions to clarify if, from the initial set of rooms that showed no use (approximately one-third of the classrooms), there was a case to be made that some of these rooms were not primarily intended for scheduled classroom instruction but had other uses within the academic programs. These rooms were re-coded, which is a standard protocol relating to space information for a utilization analysis. Some of them became meeting rooms primarily intended for non-credit and other specialized activities, others were coded to reflect their use by student study/project groups on an informally or unscheduled basis, and some were coded as open access laboratories to reflect that primary use.

The utilization of classrooms is as follows:

North Dakota University System						
Classroom Utilization Summary by Campus						
(All Rooms)						
Campus	Number of Rooms	Total ASF of Rooms	Average Enrollment	Average Weekly Rm Hrs	Number rooms w/o Utilization	% rooms w/o Utilization
Bismarck State College	80	68,817	16	20	2	2.50%
Dakota College at Bottineau	13	16,106	12	22	0	0.00%
Dickinson State University	42	40,378	12	19	6	14.29%
Lake Region State College	28	38,572	11	14	8	28.57%
Mayville State University	22	19,099	17	21	0	0.00%
Minot State University	61	55,113	18	20	2	3.28%
North Dakota State College of Science	66	64,113	16	15	9	13.64%
North Dakota State University	129	131,462	33	28	5	3.88%
University of North Dakota	179	154,123	26	23	10	5.59%
Valley City State University	33	27,284	13	15	0	0.00%
Williston State College	12	9,166	8	12	6	50.00%
System Total/Average	665	624,233	21	21	48	7.22%

Teaching Laboratory Utilization

The utilization of teaching laboratories averaged 13 hours across the system. They ranged from a high of 19 hours per week at North Dakota State College of Science to a low of 8 hours at Dickinson State University, which showed a quarter of its teaching laboratories with no utilization. Assuming that further analysis shows those rooms to have utilization not currently reflected in the course data or to primarily serve for instructional functions other than teaching laboratory, their utilization might increase to 11 hours per week but still would be the lowest within the system. This assumes that for the other institutions with rooms without utilization, theirs would also be adjusted.

The most widely used laboratory use target is 20 scheduled hours per week. Some jurisdictions have moved to a differentiation between upper and lower division and graduate use. Those generally use 22-24 hours for the lower division laboratories, and 16-18 hours for the upper division and graduate division laboratories.

Laboratory utilization can be limited by certain courses that need dedicated laboratories to keep student work in progress in place between laboratory meetings. Those dedicated laboratories can only achieve the use needed by the courses for which they are designed. This tends to occur most in upper division and graduate levels at research universities.

The utilization of teaching laboratories is as follows:

North Dakota University System						
Laboratory Utilization Summary by Campus (All Rooms)						
Campus	Number of Rooms	Total ASF of Rooms	Average Enrollment	Average Weekly Rm Hrs	Number rooms w/o Utilization	% rooms w/o Utilization
Bismarck State College	13	15,112	8	14	2	15.38%
Dakota College at Bottineau	7	5,292	8	15	3	42.86%
Dickinson State University	18	20,003	9	8	5	27.78%
Lake Region State College	3	12,211	10	9	1	33.33%
Mayville State University	6	4,521	11	13	1	16.67%
Minot State University	23	21,531	12	15	2	8.70%
North Dakota State College of Science	39	64,440	14	19	1	2.56%
North Dakota State University	64	83,509	16	14	10	15.63%
University of North Dakota	81	72,496	13	10	27	33.33%
Valley City State University	14	18,752	15	12	0	0.00%
Williston State College	15	39,513	9	14	3	20.00%
System Total/Average	283	357,380	13	13	55	19.43%

Recommendations for Additional Planning

The consultant recommends significant additional work take place during 2015 to obtain and record additional important data to better reflect the utilization of instructional facilities.

- **Seat Counts for Classrooms.** NDUS should request each campus to provide seat capacities for each classroom. This would allow the percent to which rooms are filled during scheduled class times to be determined. This is normally an important part of utilization analysis. The most widely used expectations for classrooms are between 60% and 67% of the seats filled on average across an entire institution’s classroom inventory. Seat counts would also allow the calculation of square feet per student station, which will allow the determination of whether the rooms have sufficient space for current active learning pedagogies.
- **Distance learning sections.** Many distance learning sections are held on campuses in classrooms. If these courses originate at another institution, that information is not currently being captured. It should show as use for the institution where the seats exist. It is also important for the transmitting institution to have and keep clear information on the number of students enrolled at each of the locations for these synchronous distance learning courses. The transmitting institution also should have the information on the number of students in the room with the instructor when the course material is being transmitted, so that the utilization of the instructional space used to create the transmission is counted.
- **Professional School Utilization.** It is not unusual for Schools of Medicine, Law, and certain other professional schools to desire to control their instructional spaces and make last minute determinations of the assignment of groups to those rooms. This is true of a large number of instructional rooms in the School of Medicine and Health Sciences. These range from rooms where large groups of students such as an entire year’s class meets to receive basic instruction to rooms where small groups of students are assigned in breakout sessions that meet with preceptors on a regular basis to conduct problem-based curriculum activities. Currently, most of these rooms show no use in the PeopleSoft/Ad Astra data. In fact, indicators are that many of them are used heavily. NDUS is urged to document and include this information on an ongoing basis.

- **TrainND Courses.** Several of the campuses have intensive use of instructional spaces for work force courses, as part of TrainND. That work needs to be added into the data available for utilization analysis so that full understanding of the impact these important functions have on those campuses that are TrainND hubs can be quantified.
- **Incomplete Documentation of Laboratory Sections.** The consultant has observed a number of undercounting practices in the NDUS data. In some cases, the laboratory course is only shown with the related lecture session so the laboratory time is not counted. The splitting of the course enrollment to meet in multiple laboratory rooms is not always currently documented. The consultant recommends NDUS work with the institutions where this is an issue to try to get that utilization documented.
- **Station Counts for Teaching Laboratories.** NDUS should request each campus provide station counts for each teaching laboratory. The current lack of laboratory capacity information does not allow the second major metric usually utilized in laboratory analysis to be calculated. That is the percent of laboratory stations that are in use when scheduled courses meet in the room. The consultant urges NDUS to conduct further analysis to gather that information. For laboratories where section sizes do not have as wide a range, 80% is a widely used target. The consultant most often sees institutions achieve utilization between 70% and 80% for teaching laboratories during the hours when sections are scheduled.
- **FAMIS Room Codes.** NDUS uses the room codes in the FAMIS facilities management software. It has 11 classroom codes, more than most systems. The consultant has concluded that some of those codes often reflect rooms with primary uses other than classroom. The consultant urges NDUS to review these codes.

Appendices

The consultant has provided a number of additional appendix materials, which are electronically bookmarked by institution for ease of reference. These materials include: classroom utilization analysis by building summary, classroom utilization analysis by building, classroom use by day and time, teaching laboratory utilization analysis by building summary, and teaching laboratory utilization analysis by building.

A separate volume of information shows the detailed utilization analysis room-by-room findings aggregated by building for each institution's classrooms and teaching laboratories. This information consists of over 850 pages, one page for each room.