



NORTH DAKOTA STATE UNIVERSITY
A. GLENN HILL CENTER

FINDINGS REPORT

POST OCCUPANCY

A.G. Hill Center post-occupancy evaluation completed as a collaboration between BWBR and NDSU Interior Design faculty and students.

Spring 2017

EXECUTIVE SUMMARY

POST OCCUPANCY

"The active learning classrooms have allowed me to fully implement my active learning pedagogies... the class is taught in a really exciting atmosphere. ...I have seen improvement in student grades and on surveys students indicate that they really learn a lot from each other. I think that this extra peer instruction has really helped the lower performing students." - NDSU Faculty, STEM Programs

A growing awareness of how physical learning environments influence 21st century learning goals is encouraging exploration of why space matters to the quality and character of the undergraduate learning experience. A post-occupancy study was completed in the Spring of 2017 at the new STEM education building for North Dakota State University in Fargo, North Dakota. Utilizing staff and student surveys, focus groups, and observations, the study was aimed to gather qualitative feedback and explore ways in which the building and spaces are supporting learning and teaching experiences. The primary focus was aimed at measuring occupancy performance for serving the needs of the students and faculty involved in STEM education, specific to the active learning classrooms and the variety of informal student spaces.

Highlights include:

- Overall high satisfaction is found with faculty and students. The investment in STEM education is well-received as a sense of pride by faculty and as a desired study destination by students.
- The building is highly utilized throughout the week and most hours of the day. Students opt to use the building as an alternative to the student union and library due to the space options, views, and quietness.
- Active learning strategies are enhanced by the availability of active learning classrooms. Many faculty are still adjusting course pedagogies to incorporate active learning. Most students welcome more active participation during class as part of their learning experience.

Recommendations based on findings:

- Consider changing out or relocating several lounge chair and side table groupings on the second and third floors for table and chair groupings to accommodate students' desire for this arrangement of furniture to support homework/study needs.
- Study rooms are popular, but there is frustration with lack of availability. Consider additional individual study rooms on more floors and/or adding this study space option in other buildings on campus.
- Consider more technology training and regular checks to ensure technology is in working order and that faculty understand how to use it to enhance instruction.

SURVEY SUMMARY

POST OCCUPANCY

An online survey invitation was sent to all faculty who have taught a class in a classroom within the A.G. Hill Center since opening the facility. The survey, made available in April of 2017, was presented with multiple choice questions, Likert scales, and open-ended formats. Ninety-three faculty and 350 students completed the survey, with representation across all years.

Highlights include:

- Thirty-nine percent of faculty participants identified the active learning classroom (Rooms 130, 132, 300) that included multiple screens/monitors, white boards, large student tables, and mobile seating as moderately effective to most effective.
- Thirty-seven percent of all faculty participants found that mobile chairs served as an effective means for gaining student collaboration.
- Over 64% of those responding to the open-ended question responses found that the new layout enhanced their active learning experience at NDSU and engaged them in collaborative learning experiences.
- Sixty-one percent of the students identified the A.G. Hill Center's convenient location as the primary reason they selected it as a point of destination over other spaces on campus and that it provided a quiet and peaceful setting.

NORTH DAKOTA STATE UNIVERSITY
A. GLENN HILL CENTER

FACULTY SURVEY

POST OCCUPANCY



faculty survey

Faculty responses by appointment/ rank and period of employment

An online survey invitation was sent to all faculty who have taught classes in the A.G. Hill Center since the opening of the facility in January 2016. The survey, made available in April of 2017, was presented with multiple choice questions, Likert scales, and open-ended formats.

Ninety-three faculty members participated in the survey.

Highlights include:

- 41% response rate from faculty teaching in the A.G. Hill Center
- Faculty participants teaching in the A. Glenn Hill Center have been at NDSU from less than a year to 30+ years
- Representation of all faculty ranks and years of experience are teaching at the A.G. Hill Center

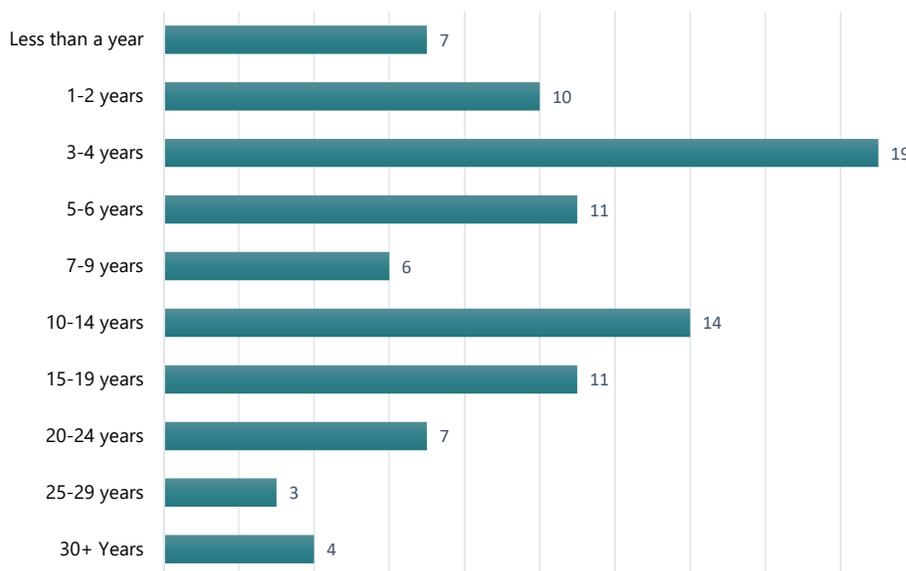
Tenured/Tenured track faculty serve as the principal [primary] faculty of instruction for the A.G. Hill Center (37.23%), while the remaining faculty that have the opportunity to teach in the collaborative learning environments include Professors of Practice (11%), Lecturers (9%), Instructors (4.3%), and others (14%).

Faculty participants had been employed at NDSU less than a year to over 30 years, with the largest cohort of faculty represented by those in the 3- to 4-year range (20.26%). The next largest cohort group was found to be in faculty that had been teaching with NDSU for 10 to 14 years (15.22%). It was refreshing to see the range of years of experience in teaching engaged in a new classroom building.

RESPONSE MIX BY APPOINTMENT/RANK



RESPONSE MIX BY PERIOD OF EMPLOYMENT



faculty survey

Classrooms indicated for instructional experience in the A.G. Hill Center



Of the 93 faculty participants, faculty indicated experience teaching in a range of 1 to 9 different classroom types in the A.G. Hill Center. All classroom types are represented in the responses of the faculty.

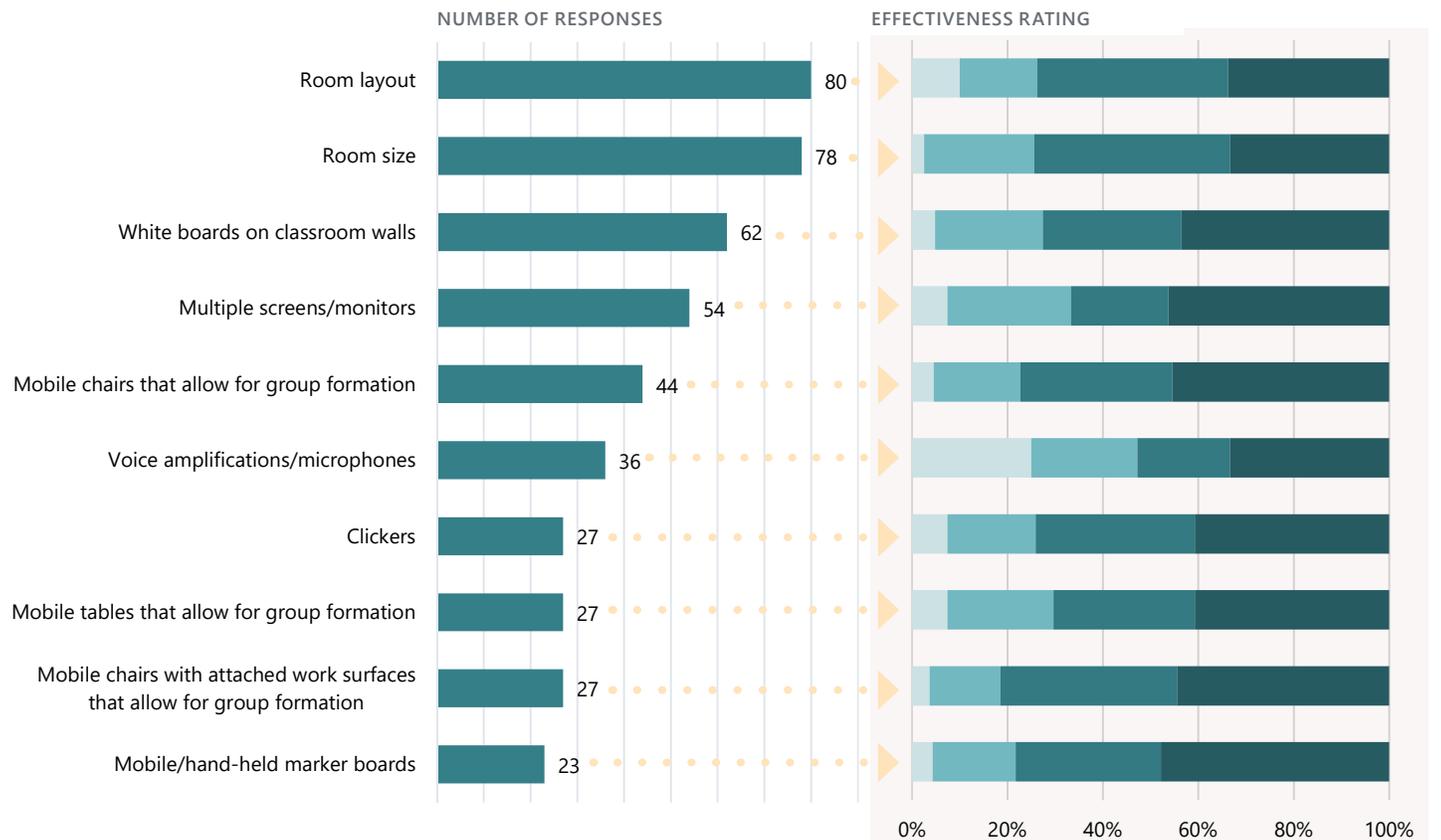
Twenty-one percent of the faculty have taught in at least two different classroom types, with two percent of the faculty having taught in nine different room types. One of the faculty members that taught in nine different settings used all three different levels, including collaborative classrooms (130/132, 300) as well as labs and preparation areas on the second floor (208, 212, 214, 216, 218, 234), demonstrating the flexibility of teaching spaces A.G. Hill Center can provide for NDSU faculty.

Faculty participants most represented in this survey were found to be users of the collaborative classrooms located on the first floor — Room 130/132 (10%) and Room 300 (9%) located on the northeast corner of third floor. Both active learning classrooms (Room 130/132, 300) provide faculty with mobile chairs placed around large student tables, multiple screens/monitors, white boards that encircle the room, and centrally located podiums to engage students in collaborative learning activities.

faculty survey

Effectiveness of elements for supporting student collaboration activities in the classroom

CLASSROOM ELEMENT EFFECTIVENESS TO SUPPORT STUDENT COLLABORATION ACTIVITIES



Room layout (29%) and room size (28%) were found to be the most effective elements in supporting student collaboration in the classroom. Additional elements faculty identified included white boards (29%) and having the ability to project information through multiple screens (27%) enhanced their ability to engage student collaboration.

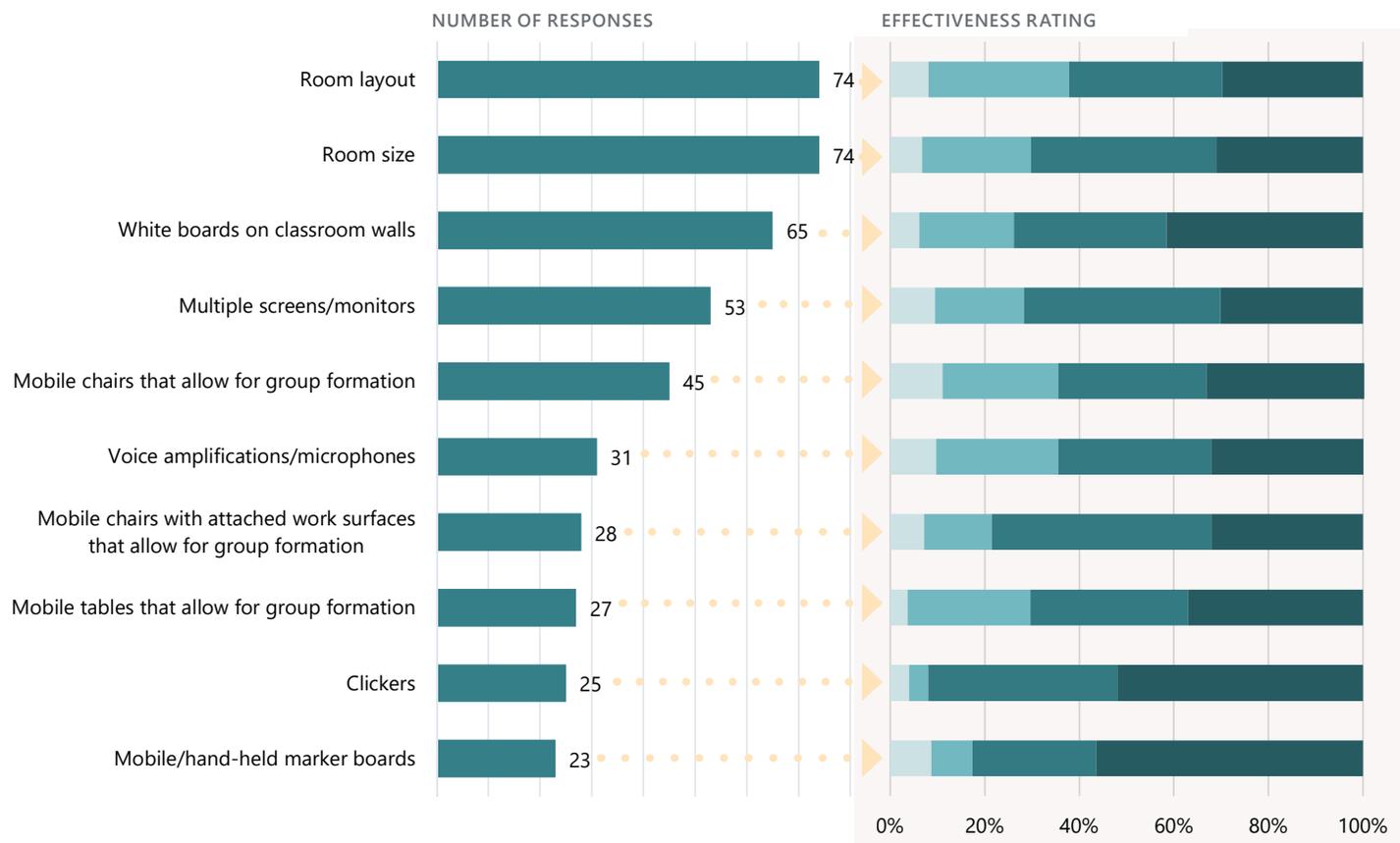
In looking across different faculty appointments and years in service, the only major difference appeared to be with tenured/tenure-track faculty that identified both white boards and multiple screens/monitors (18%) as the most effective tool in the classroom for student collaboration.

When combining moderately effective and most effective classroom elements for student collaboration, 37% of all faculty participants found that mobile chairs served as an effective means for encouraging student collaboration. The mixture of room layouts, vertical surfaces to engage students to write on, projection of imagery, and mobile furniture all serve to help faculty engage student collaboration.

faculty survey

Effectiveness of elements for supporting student-faculty interactions in the classroom

CLASSROOM ELEMENT EFFECTIVENESS TO SUPPORT STUDENT-FACULTY INTERACTION IN THE CLASSROOM



Fifty-six percent of faculty identified that room size was moderately to most effective in contributing to supporting faculty-student interaction, while tenured/tenured-track faculty (36%) felt room size played a larger role in the contribution than lecturers/instructors/professor of practice (18%). Forty-nine percent of faculty identified the room layout moderately to most effectively in supporting faculty interaction in the classroom. Tenured/tenured-track faculty (16%) and those faculty that have been teaching for 10 more years (13%) identified room layouts as the most effective element in supporting student-faculty interaction.

When looking at other elements within the room, 20% of all faculty identified white boards as the most effective element to support student-faculty interaction in the classroom setting. Tenured/tenured-track faculty identified mobile tables as moderately effective (14%), while faculty with less than 10 years of service at NDSU rank the use of mobile tables slightly higher (15%). Twenty-six percent of the tenured/tenured-track faculty identified the use of multiple screens/monitors in the classroom as moderately to most effective in contributing to faculty-student interaction as compared with 24% of the faculty with less than 10 years of service at NDSU.

faculty survey

Effectiveness of classroom layouts and furniture for supporting student collaboration activities in the classroom

CLASSROOM LAYOUT AND FURNITURE EFFECTIVENESS TO SUPPORT STUDENT COLLABORATION ACTIVITIES IN THE CLASSROOM



Thirty-nine percent of faculty participants identified the active learning classroom (Rooms 130, 132, 300) that included multiple screens/monitors, white boards, large student tables, and mobile seating as moderately effective to most effective. This response was consistent across length of service at NDSU and rank.

The second moderately effective to most effective (31%) classroom layout for faculty participants can be found in those active classrooms which include mobile seating with the attached arm (Rooms 326, 330). Again, the responses were fairly consistent across length of service and faculty rank.

faculty survey

Effectiveness of classroom layouts and furniture for supporting student collaboration activities in the classroom



Active Learning Classroom - Mobile Tables, Mobile/Hand Held Marker Boards, and Mobile Seating	Least Effective	Somewhat Effective	Moderately Effective	Most Effective
Faculty	4%	22%	37%	37%
Student	6%	26%	41%	27%



Active Learning Classroom - Mobile Seating with Attached Work Surfaces and Central Podium	Least Effective	Somewhat Effective	Moderately Effective	Most Effective
Faculty	0%	15%	35%	50%
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Active Learning Classroom - Multiple Screens/Monitors, White Boards, Large Student Tables, and Mobile Seating	Least Effective	Somewhat Effective	Moderately Effective	Most Effective
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Active Learning Classroom - Mobile Tables, Mobile/Hand Held Marker Boards, White Board Wall, and Central Podium	Least Effective	Somewhat Effective	Moderately Effective	Most Effective
Faculty	16%	32%	20%	32%
Student	8%	30%	44%	18%

When comparing faculty responses to student responses asking to rate the effectiveness of classroom layouts and features in supporting collaboration activities, some differences were realized. Students rated the tiered classroom higher in overall effectiveness while faculty rated the active learning classroom with mobile seating (with attached work surfaces) and central podium as more effective in supporting collaboration. Both students and faculty rated the large active learning classroom with multiple screens/monitors, large student tables, and mobile seating as very effective in supporting collaboration activities.

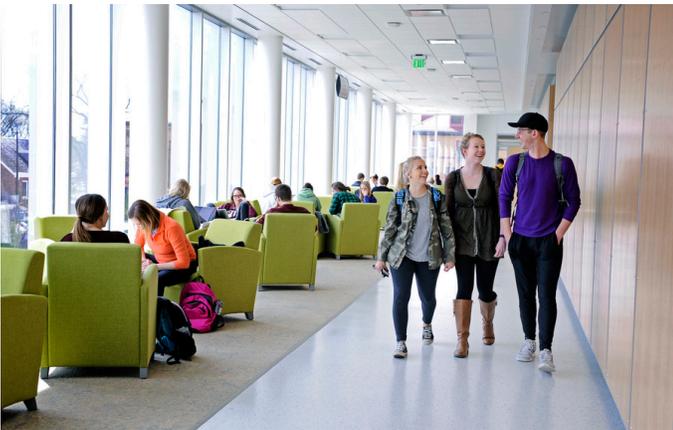


Tiered Classroom (First Floor)	Least Effective	Somewhat Effective	Moderately Effective	Most Effective
Faculty	26%	21%	32%	21%
Student	6%	17%	49%	27%

NORTH DAKOTA STATE UNIVERSITY
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STUDENT SURVEY

POST OCCUPANCY

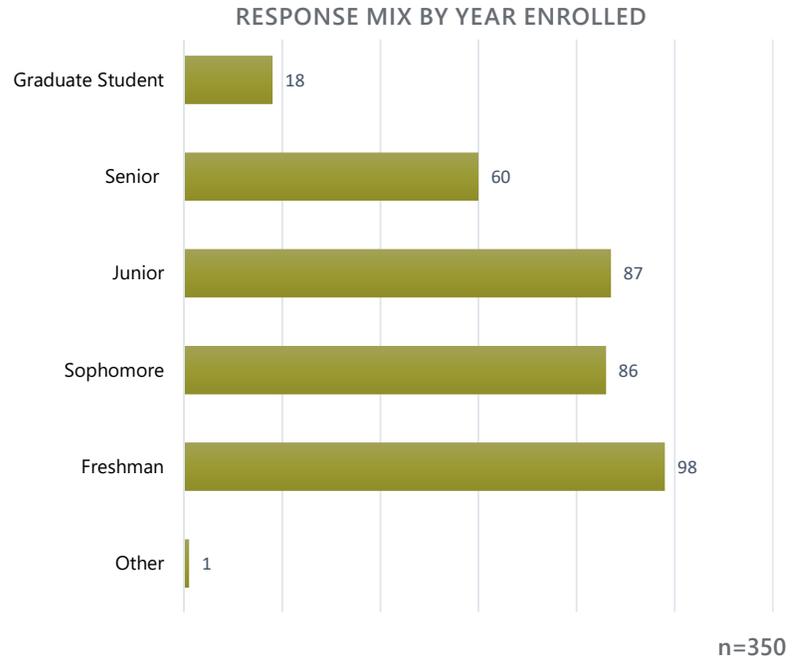


student survey

Students by academic year

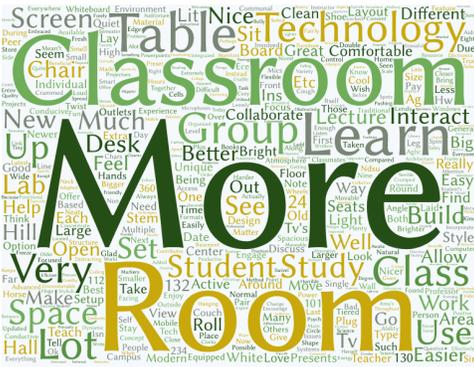
An estimated 4,000-5,000 students use A.G. Hill Center daily. Classrooms are available to students during the evening hours for study time, group activities, and club meetings. An online survey invitation was sent via the NDSU student listserv. Students invited to participate included those students taking classes in the A.G. Hill Center, or those students that use the building for studying and extracurricular activities.

The survey, made available in April of 2017, was presented with multiple choice questions, Likert scales, and open-ended formats. Three hundred and fifty students completed the survey, with representation across all years.



student survey

In what ways are the learning experiences in the A.G. Hill Center classrooms unique compared to other classrooms on campus (continued)



Group work was much easier

The extra outlets

Single rooms for an individual or pair of students

There are so many more possibilities for collaboration and integrating learning/studying with technology

group seating

They have a much more open feel to them.

Lots of white boards and TV's around the room so that no matter where you are sitting it is easy to see the powerpoints

Most classes are useful for class discussions

Teachers that I have had have not really adapted to the new environment. May take time however some do take advantage of the new technology and way the classroom is laid out.

The group tables and screens around the rooms are extremely conducive to learning.

More technology is preset and embraced in the classroom.

The systems in place for presenters is really nice, I'm glad most rooms have these systems. I also enjoy the table space and the angle of the floor in the large lecture rooms.

Very up to date technology and the classrooms are very nice!

they are more communal. you are always facing others and being more involved

Everything is newer and nicer. And the chairs are more comfortable.

Some chairs are actually comfortable, doesn't smell like an old basement

Technology is better incorporated (monitors, computers, etc.) and high quality furniture.

Large screens and newer, more comfortable chairs and desks

Design

Up to date and spacious.

Very modern with good equipment.

Desks individual and can roll. Multiple projectors. Lots of white board space.

Being updated, I feel like I have everything I need in one building.

Its new and up to date

The moveable tables in some classrooms are very nice for forming groups and are a great alternative to single student desks. However, the rooms that use those tables are far too wide for all students to effectively see notes written the whiteboards. Secondly, the tiered classroom is very nice in that it students do not have their view of the whiteboard obstructed by those people sitting in front of them.

They are more spacious.

I find that the design lends itself to collaborative work, which other classrooms around campus do not.

The classrooms are big and bright and have many different options for studying or learning techniques.

I like the set up and new technology...last semester we had issues getting mics to work but now we are able to use them

more open, more modern

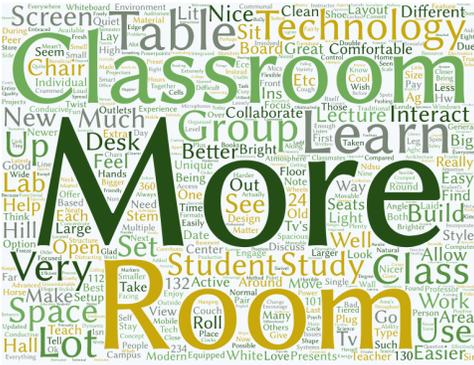
TV's

The white boards throughout classrooms are beneficial

Much easier to communicate as a group

student survey

In what ways are the learning experiences in the A.G. Hill Center classrooms unique compared to other classrooms on campus (continued)



The tables in most rooms of the stem building offer a unique learning experience which works very well in some classes.... and not so well in others. Loosely structured, predominantly group activity based classes work best in these rooms. I also really enjoy the study rooms that are available for use by students, however I wish there were more, or perhaps some smaller rooms- very frustrating when you bring a group to study and all cells are taken by single students.

Open area rooms, less distractions compared to some lecture halls. Modern.

The classrooms seem to allow for more interaction than others on campus.

More electronics in each room and modernized for technology

Spacious

Allows for more hands-on activities and collaborative work.

Not very different

Lots of space. Not so close together

24 hours

large area, great projectors for presentations. Whiteboards and MARKERS for use in collaboration. Smart boards were also very neat

table/room arrangement

I like how there are movable chairs in some of the classrooms. It makes it a lot easier for group based classes and doesn't make the classroom feel as stressful. I also like all the technology.

It is unique because there are eight other people at your table that are learning along with you and help each other understand the material.

The AGHC learning experience is unique because it is more focused on collective learning than individual learning.

In general, I find that these classrooms and the teaching in them is designed to get everyone to do well enough, rather than encouraging everyone to do his or her individual best.

Its different

My classroom is more interactive than just a lecture hall

The classrooms are very stylish and seem to be upgraded with the latest technology.

Much more open, brighter, very easy to move around

Extra study spaces

They are new, big and has new technology equipment.

Modern, advanced technology

I don't

there are a lot more collaborative area's that help engage students, and the acoustical sound control is better

Better class room set ups with more/bigger lecture screens

The circle tables are great for collaborating with other students.

The different set up of the desks/tables

The chairs are much nicer, and the rooms are much more conducive to group work. The rooms are also a lot brighter, which I like, and they're much easier to give class presentations in.

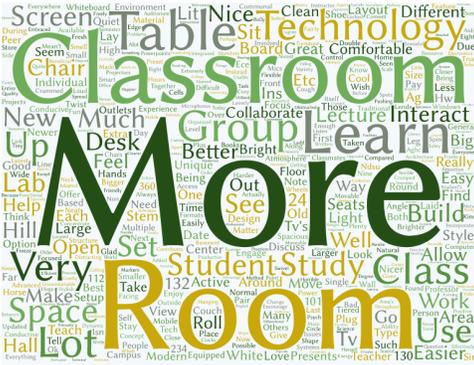
I feel like it is more welcoming for students to work together on problems.

360 degree classrooms

Better projectors

student survey

In what ways are the learning experiences in the A.G. Hill Center classrooms unique compared to other classrooms on campus (continued)



The learning is interactive which is something that isn't like any other class I've had.

Fresh and new

A lot of natural light! Classroom designs (swivel chairs and movable desks) help me stay focused, as do the multiple screens.

Different classroom layouts, different building feeling, more open space

The students who primarily use the building generate an energy which is conducive for my learning practices.

They are very clean and white. I can tell the building is fairly new.

The rooms are more interactive

Larger rooms with more natural lighting

Seating

much more open and usable

Use of new technology

It's more interactive and with the high level of technology it makes learning more interesting and encourages attendance as well.

Most rooms allow for much more peer and instructor interaction as opposed to traditional lecture style rooms.

The added technology also allows for more interactive learning.

Nice use of technology

Tables in 132 instead of a lecture room

I like how bright all the rooms are, it makes paying attention much easier, and brings a happier atmosphere to the rooms.

The screens in the lecture rooms are easier to see. Also, the labs are set up much more convenient.

I find that it is a lot harder to learn since it does not have traditional classrooms, there is too much going on and it is distracting

The classrooms allow for a much for engaging learning environment when compared to other classes on NDSU campus.

Advanced technology

better.

They are collaborative and allow for a lot of opportunities to discuss with classmates and self teaching or peer teaching.

It's really helpful that there are rooms with adjustable brightness and chairs that line the wall made out of windows.

round tables and screens everywhere are cool

The spaces are clean comfortable and bright spaces that allow you to learn freely.

I really like the setup of the classrooms and think they are useful because of how the tables are all around and the chairs have wheels. This makes the students more engaged in learning

The layout of the tables in the classrooms, all of the tv screens on the walls or hanging from the ceiling, and the lighting in the classrooms are great as well.

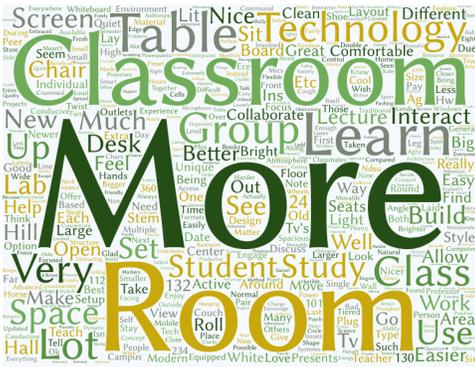
uniform and comfortable

The technology in the room is great

The large rooms and tables allow you to spread out and focus because you do not feel as if you're cramped into the space.

student survey

In what ways are the learning experiences in the A.G. Hill Center classrooms unique compared to other classrooms on campus (continued)



I like the learning rooms with big group tables and tv's at many angles with lots of white boards

It is nice, modern, and has a lot of technology.

Big screens, comfy chairs, nice tables, tables with plugs

They allow for more collaboration between classmates and interaction with the professor

More space, better options for study spaces, more outlets

They are easy to manipulate for students (i.e. chairs roll and spin to allow better views/student interaction, multiple formats available to give presentations on) and professors (multiple formats for presentations, space to store specimens and equipment right in the classroom).

No matter the teaching style, the classrooms are just so much more comfortable

Terrible. Before, we used to be able to go to labs in the ECE building, where we had access to our materials 24/7. When the lab was moved to the STEM building, the lab is locked except for when we have class, so we can't work on labs outside of class. Also, the seating is bad when everyone is facing a different direction.

I have my labs in this building and so they are different than lectures because they are more hands on.

The rooms with tables allowing groups is a different way of learning, and I find them to be more open

Study rooms and whiteboards everywhere

the large windows and awesome architectural building

More interactive

I only have a class in the large lecture hall so that class is not different than any of my other classes.

Very focused classrooms to what the class needs

It is so much more conducive to learning!!

The availability of the large TV screens used in lecture powerpoints

the space and technology

More interactive with the whiteboards and the numerous large screens.

they have more interactive learning classrooms

I appreciate the rooms with round tables. Much easier for group work. More engaging than other classrooms at NDSU.

The classrooms in the STEM building are unique due to the attempts at mobile collaboration of the work spaces

Build around student interaction and learning

I really like that there are plenty of study rooms set up

A more modern atmosphere

I particularly like the classrooms with the rolling desk chairs. The desks are actually large enough to use as a true desk and they allow for a dynamic classroom.

more interactive learning

More open, at least in the classroom I'm in.

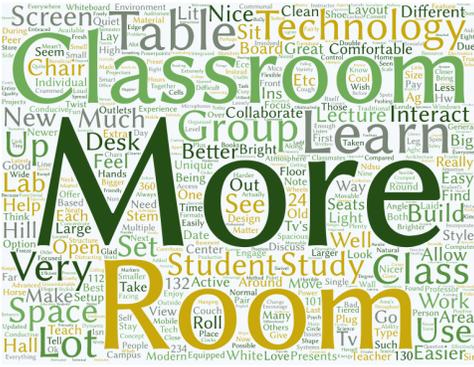
The rooms are very well laid out to be able to listen to the teacher no matter where you are.

The active learning classroom presents a different atmosphere for learning.

The interactive learning with the TVs and round tables allow students and teachers to communicate more effectively and stay engaged. The white boards on the main floor and the study rooms are also very useful for studying.

student survey

In what ways are the learning experiences in the A.G. Hill Center classrooms unique compared to other classrooms on campus (continued)



Different set up, more features

I think the STEM building is a great resource for students to go study at any time. There are lots of spaces that promote studies.

The projection equipment has been extremely useful, especially the freeze frame option.

It is like the library but it is ok if I am loud.

No set seating structure allowing for easy change of groups without moving all your books comps etc

The technology incorporated into the teaching style.

I like the individual study spaces.

Love the couches in the hallway and clean look throughout

They are more interactive and connected. The technology has really given professors more flexibility in how they teach.

Nice shape, cool chair and desks, great use of outlets at the desks

They allow for group activities and more involvement

They have both lecture rooms and interactive rooms

There's a lot more group work in general, and the study spaces are quite nice

very interactive and bright- keeps me awake

Well lit, clean, and typically the technology seems to work well. Seating and tables are functional and comfortable.

I feel like the rooms are clean

The layout of the classrooms ranges from being able to move around for group projects to a lecture style classroom.

Large rooms while feeling small

The A.G. Hill Center feels a lot more updated and more useful when compared to other classrooms. There are a lot more newer tech in them as well.

It is way better because of the technology, the way the classrooms are set up and the labs are so much better.

The classrooms are much better suited to collaboration with other students

New technology, great table/desks and chairs, natural light and windows!!!

Many different classroom layouts

More space for students, easy to see computer presentations on the screens

different desk options (the moving chairs with attached desk)

It seems to be more functional than other buildings

I find the class rooms are very comfortable compared to other classrooms. Makes it easier to concentrate.

The extra white boards and study rooms on the first floor are very helpful for studying.

The classroom was really big and the lighting was bright. We utilized those portable white boards which was a new feature.

They're generally lit much brighter

It is modern and is a great environment for learning with all the sitting areas and study rooms

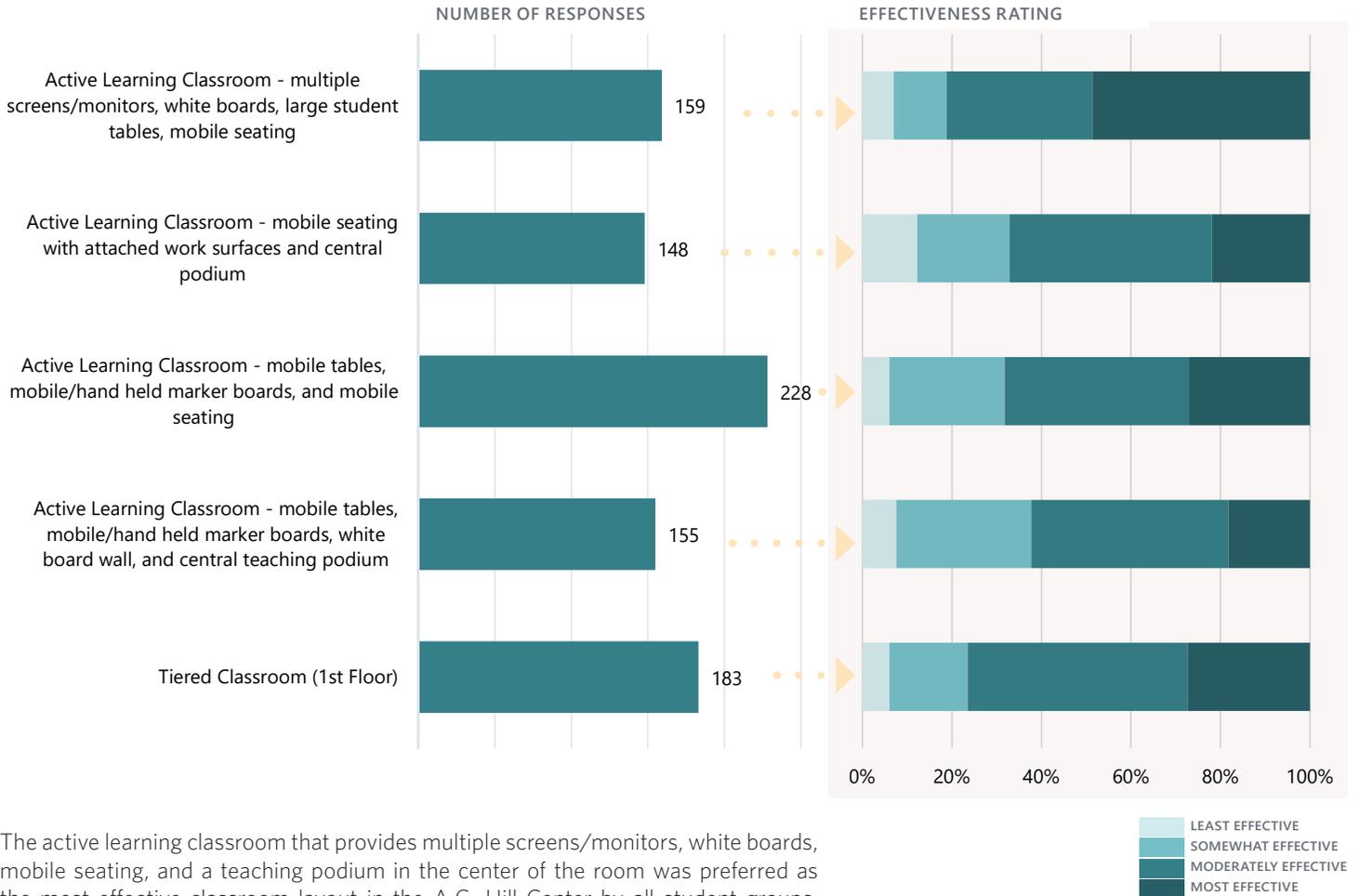
The layout of the rooms in the A.G. Hill Center is unique with more open space and more mobility for the potential for active learning

Provides for easy group work and hands on learning.

student survey

Effectiveness of classroom layouts and furniture for supporting student collaboration activities in the classroom

CLASSROOM LAYOUT AND FURNITURE EFFECTIVENESS TO SUPPORT STUDENT COLLABORATION ACTIVITIES IN THE CLASSROOM



The active learning classroom that provides multiple screens/monitors, white boards, mobile seating, and a teaching podium in the center of the room was preferred as the most effective classroom layout in the A.G. Hill Center by all student groups. Freshmen gave it the most effective rating (12%) as compared with seniors (3%). It appears that, while a popular choice across all student groups, the lower numbers may be a reflection of the actual sample size of the study and the classes that are typically scheduled in this type of classroom configuration.

student survey

Effectiveness of classroom layouts and furniture for supporting student collaboration activities in the classroom



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When comparing faculty responses to student responses asking to rate the effectiveness of classroom layouts and features in supporting collaboration activities, some differences were realized. Students rated the tiered classroom higher in overall effectiveness while faculty rated the active learning classroom with mobile seating (with attached work surfaces) and central podium as more effective in supporting collaboration. Both students and faculty rated the large active learning classroom with multiple screens/monitors, large student tables, and mobile seating as very effective in supporting collaboration activities.



Tiered Classroom (First Floor)	Least Effective	Somewhat Effective	Moderately Effective	Most Effective
Faculty	26%	21%	32%	21%
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student survey

Comments regarding
classrooms at A.G. Hill Center
(continued)



I sincerely look forward to any class I have in this building.

I use my tablet for note taking...and it has the option to use a USB for charging. The tables in the classroom have a 3-prong plug in available but not a USB hub for charging.

As someone with a hearing disability, depending on the layout of the room, the location of the podium can make my situation more difficult. It is hard for me to function when I'm sitting in a location, and the instructor is talking away from me because half of the class is behind them.

the first floor classroom table setting is much more effective than the tables and active learning classrooms for group work

The classes appear to encourage collaboration which can be good in some cases, but it can also lead the smart kid into doing all of the group work, and sometimes the smart kid doesn't really want to work with anyone else so he or she doesn't care that others contribute. Another thing is that while collaboration is encouraged, it appears that it is used to compensate for students not getting individualized attention from the instructor in class.

Active Learning Classroom - multiple screens/monitors, white boards, large student tables, mobile seating was very effective for me to learn.

Too wide of a layout for all to see board/projected material effectively. Additionally, with both projectors centralized, the outside groups are excluded from that portion, and the inside is excluded from the writing on the board. The projectors should be staggered every-other. Board----Projector-----Board-----Projector

They're still in the early stages, so I think professors are having a hard time adjusting to just how much a STEM classroom can do.

The place is kind of bland and very sterile feeling which makes it unwelcoming.

I liked how versatile each room is so that you can change seating arrangements to each lecturer's specific teaching style i.e. the way they like to have their students to be sitting.

It's hard to take notes in the active classrooms because our teacher (Dr. Pruess in microbiology) refuses to use a microphone. When her head is facing your side of the classroom, you can hear. However, when her head is away from you, you can't hear her.

I think that the multiple screen classrooms could be better. The instructor will point at one screen that every student may not be able to see.

Active Learning classrooms are by far the most helpful and adaptable to different needs.

I really enjoy these new classrooms!

I teach/have class in the labs. I understand the purpose of the hanging outlets, but I feel that it's a waste of time since most people cannot get to them without dangerously climbing on objects. The tables rarely move (and are super heavy when moved), so it basically defeats the reason of why they did that in the first place.

If there was more room between the rows of tables in the tiered rooms, it would've been more effective, allowing the professor to reach all students.

Lab space works well

I know this isn't for classrooms but it would be nice to have more tables out in the hallways and seating areas to work on homework, study, and easier to use laptops.

Very cool

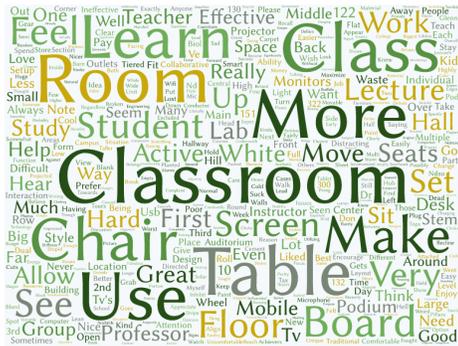
Please paint them. The white everywhere makes it feel like a mental hospital. A stripe of green or something would not go amiss.

I love this place- should keep the classrooms open for longer and on weekends because they are fabulous study areas

Very much like wheels on chairs, less disruptive and easy to move on.

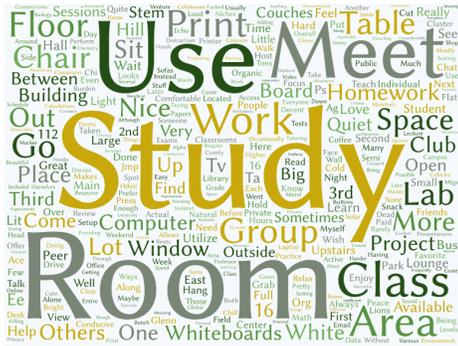
More outlets would be useful, some chargers do not fit in the ground outlets.

Fantastic facility conducive to learning. Great study nooks on the main floor and upstairs.



student survey

Reasons for students using A.G. Hill Center when they do not have scheduled classes (continued)



Study, but tables by whiteboards are too small when trying to work with others

The space is really conducive to learning, it's easy to focus in this building.

Attend or put on study sessions and to study on my own

Group meetings

Use computers or study rooms

Printing or studying

for club meetings and studying rooms or in one of the study areas downstairs

Study, use white boards

Individual study rooms and large rooms with HDMI tables

To work on group projects

I come and study or do homework on the second or third floors on the green chairs. It's really nice to be able to see outside and get a lot of natural light from all of the windows.

I come to the AG hill center to study and use the study rooms but finding an open study room is a challenge and all of the seething on the east side of the building consist of chairs and coffee tables that are inefficient to study at. Actual tables and chair would be much more effective!

Study with friends

It's nice to just go to A. Glenn Hill Center to study Biology or just sit in lounge areas on the second and third floor.

Computer cluster, study rooms, chairs to sit and do homework

Studying. The independent study rooms are really beneficial. Also, the more secluded public study areas are also great because they feel more private.

Computer lab

Another lounge area of sorts? or maybe outside seating for when its nice.

Its my favorite on campus to study

Waiting for a class or to use one of the study rooms.

to see if its solar powered yet in the face of global warming

I occasionally come there to study before and after classes. It is common though to not be able to find a study room as there are only 6 in the entire building. Studying outside the enclosed tons is often not practical as they building is very loud, sound sends to echo and reverberate up and down the main hallway

I come to study and print out worksheets

To use the computers to print stuff

To study or work on homework

To study with others.

To study on the big white boards

I study in the study rooms. Especially when I have a group project to work on

To work on homework in the lounge area with the large windows

Studying, all couches should be replaced with tables and chairs

Printing and studying/meeting groups

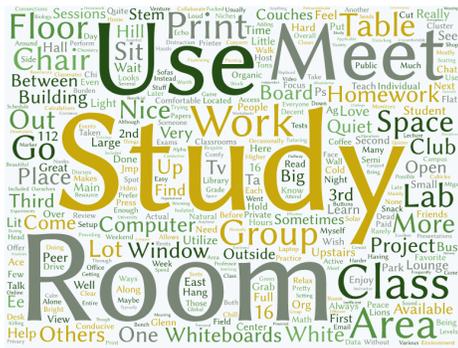
different place to study

study rooms... PS STEM NEEDS MORE THEY'RE ALWAYS FULL

Study, use whiteboards, mtgs

student survey

Reasons for students using A.G. Hill Center when they do not have scheduled classes (continued)



Studying. Love the areas with the whiteboards and couches on the main floor and the areas by the big windows on 2nd and 3rd floor. Also been in assorted classrooms for student org meetings.

Study, work on homework/group projects.

I'm planning to bring a group of friends there to collaborate, but parking is so fucked it's not worth the hassle.

I come to work with classmates on homework in the study spaces.

For studying with classmates and using the technology available

Printing in the main area, studying, and meetings.

Studying or using the computer clusters

To study. I would LOVE more study rooms

To study or work on projects both by myself or with groups of people. I also use it as a location to wait between classes.

Study every night.

Its calm and not too quiet like the library, and the chairs are comfy.

Occasionally to study but there aren't enough tables available to do as much, usually they are full when I go to study there during the day.

Study, work on projects, or do homework

A meeting place that everyone knows where it is, Chi Alpha Worship

To study and to print

To use the whiteboards and group study with people from my class

I have gone there to use the study rooms.

study rooms, lots of chair space

Using the computer labs late at night and on weekends.

To study individually and with groups and use the computer lab

To work on homework

Study rooms and group projects

To work on group projects

Presentations/meetings

I like to study here, since they have a variety of rooms

To study. There are not enough study spaces!

To study. Love that there are chairs & tables, couches, and study rooms are available.

I utilize the study rooms for personal and group work

I don't because the study rooms are always being used anyway

To study. Great study space and a nice environment. If only there was a coffee shop!

I study upstairs by the windows.

Study or do homework in the study rooms

To use the white boards to study

Study rooms and organization meetings

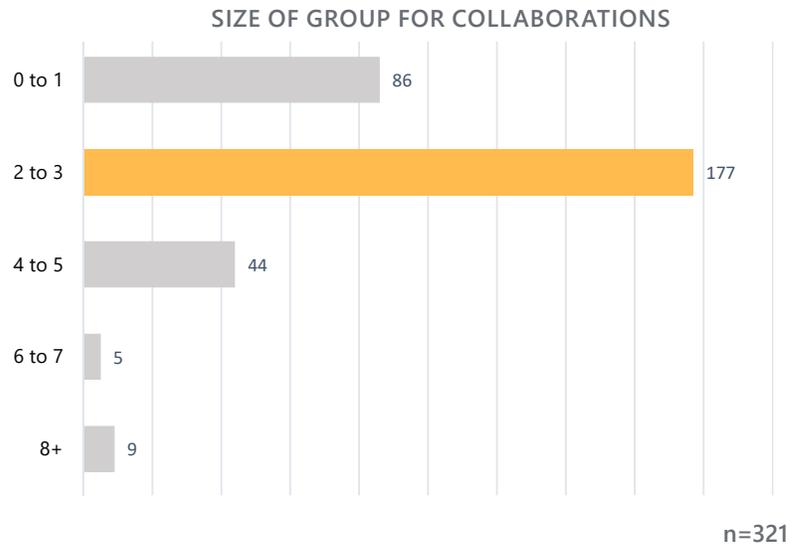
Study, use the classrooms that have whiteboards for studying

— END COMMENTS —

student survey

Size of collaboration groups

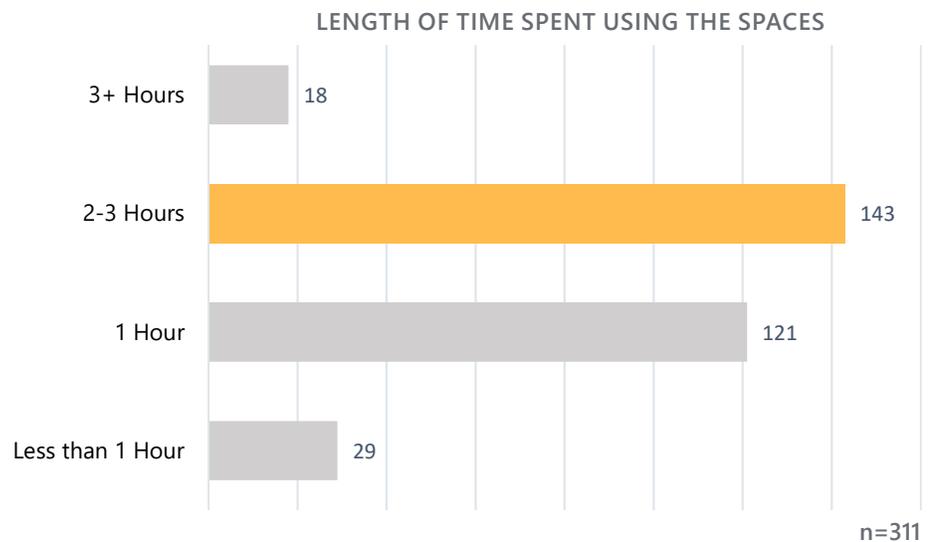
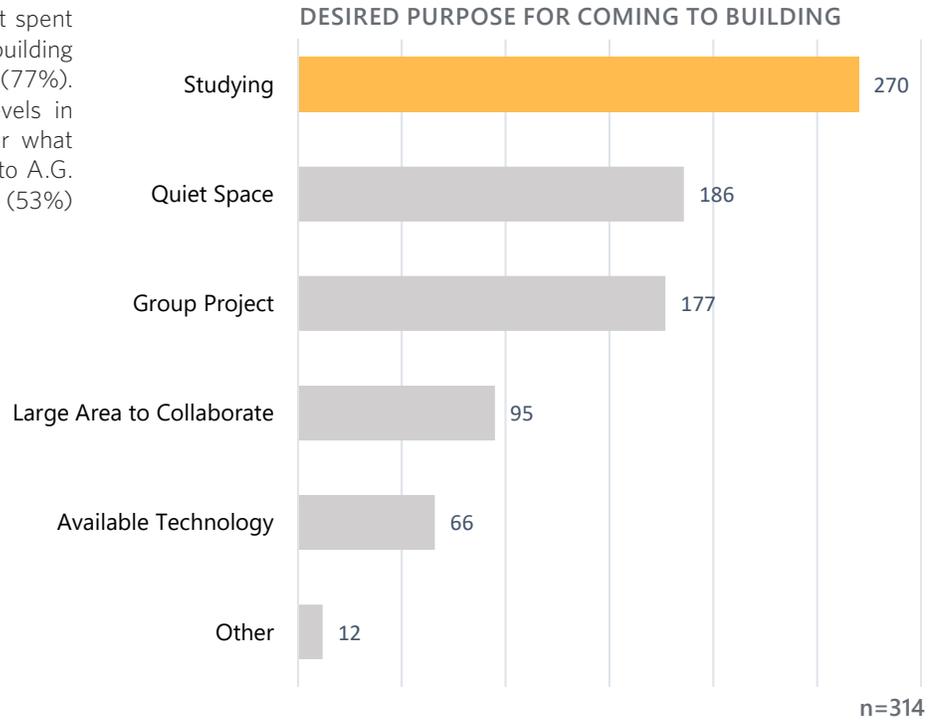
Fifty-five percent of the students (177) indicated that they typically collaborated in groups of two or three people when studying or working on group projects at the A.G. Hill Center. This is further supported through the behavioral observations that will be discussed later in this report and written comments provided by the students. The open study areas, enclosed study rooms during daytime hours as well the availability of open classrooms during the evening hours are populated with groups of student as they collaborate on assignments or work on projects. The ease of access to spaces that support these types of activities is made possible through room layouts, furnishings, and readily available technology.



student survey

Primary purpose for coming to A.G. Hill Center AND length of time using the spaces

Forty-one percent of the students that spent time in the A.G. Hill Center are in the building for 2-3 hours and are typically studying (77%). This is consistent across all class levels in how long they use the space and for what purposes. In addition, students come to A.G. Hill Center because it is a quiet space (53%) and to complete group projects (51%).



student survey

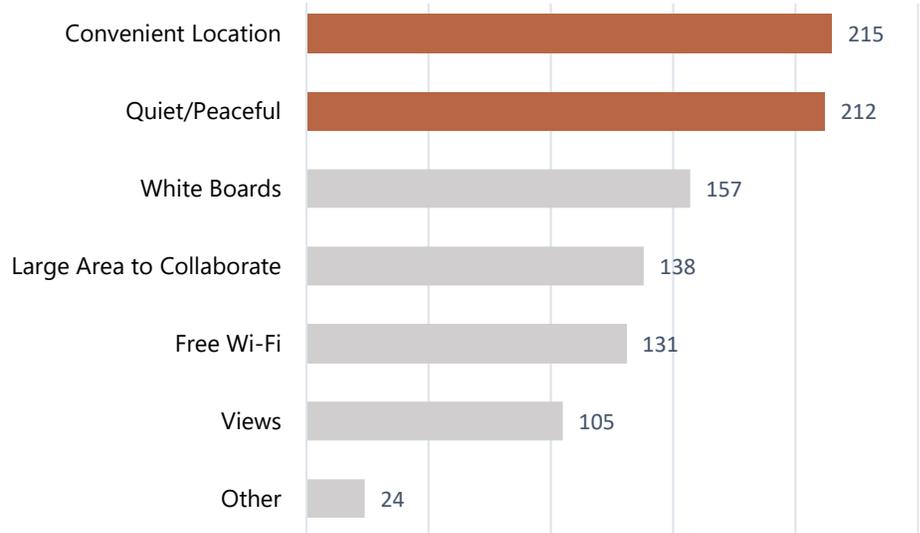
Reasons for selecting a space in A.G. Hill Center over another space in the building or on campus

Sixty-one percent of the students identified the A.G. Hill Center's convenient location as the primary reason they selected it as a point of destination over other spaces on campus and that it provided a quiet and peaceful setting (61%).

The easy access to white boards (45%), whether in hallways, niches, or study rooms, continue to contribute to students selecting A.G. Hill Center as a destination to study or collaborate on group activities. These three elements were consistent across the freshmen, sophomore, and junior classes.

Seniors preferred large areas for collaboration over white boards and graduate students identified free Wi-Fi over all elements previously identified. It is necessary to keep in mind that the graduate student population is relatively small in comparison to the other classes represented in the building.

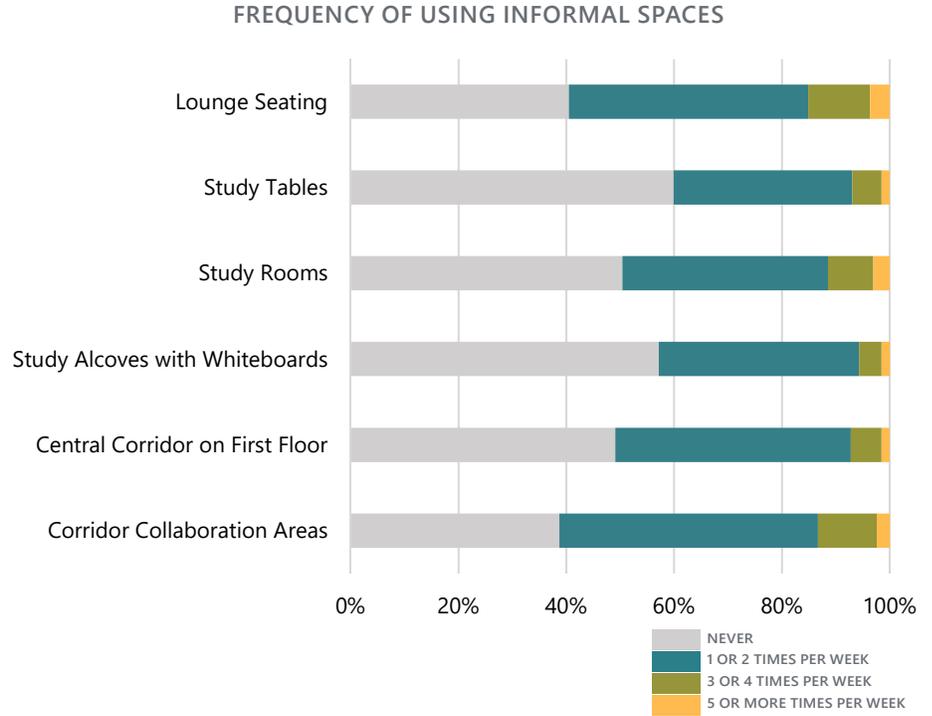
REASONS FOR SELECTING SPACE(S) FOR INTENDED PURPOSE



student survey

Frequency of use for informal student spaces

Study rooms are in high demand, with 47% of the participants using the space 1 to 4 times a week. Lounge seating along the perimeter of the north and south corridors of the 2nd floor create collaboration areas that are used by students at least 1 to 2 times a week (46%) as well as lounge seating (47%) located on 2nd and 3rd floors on the east side of the building facing Churchill Field. Much of the desire for the seating on the east side of the building, regardless of level, can be attributed to the views out of doors. This is supported by the open-ended responses and behavioral observations.



Space Type	Never	1 or 2 Times/Week	3 or 4 Times/Week	5 + Times/Week
Corridor Collaboration Areas	39%	48%	11%	2%
Central Corridor on First Floor	49%	44%	6%	2%
Study Alcove with Whiteboards	57%	37%	4%	2%
Study Rooms	50%	38%	8%	3%
Study Tables	60%	33%	5%	2%
Lounge Seating	40%	44%	11%	4%

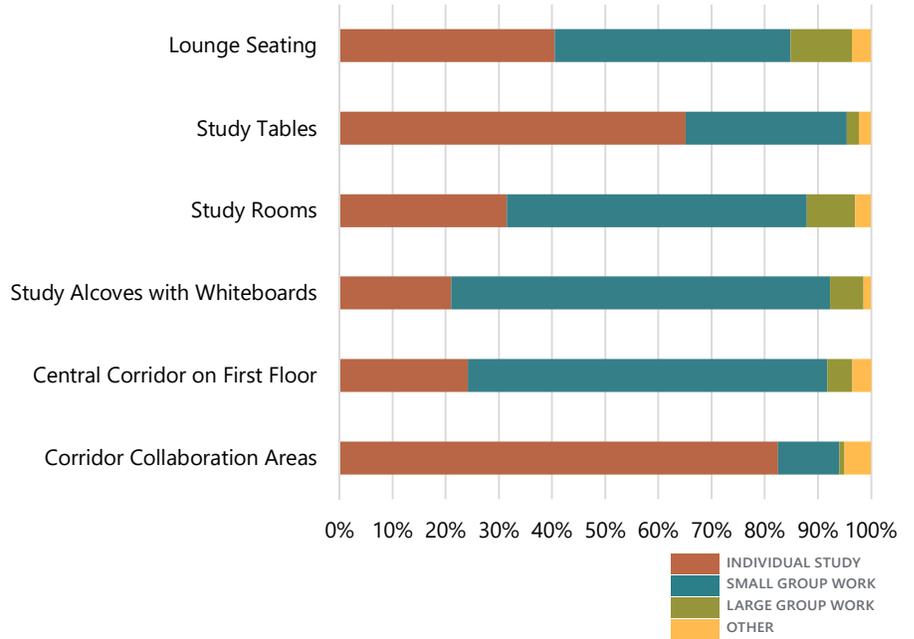
student survey

Type of activity for informal student spaces

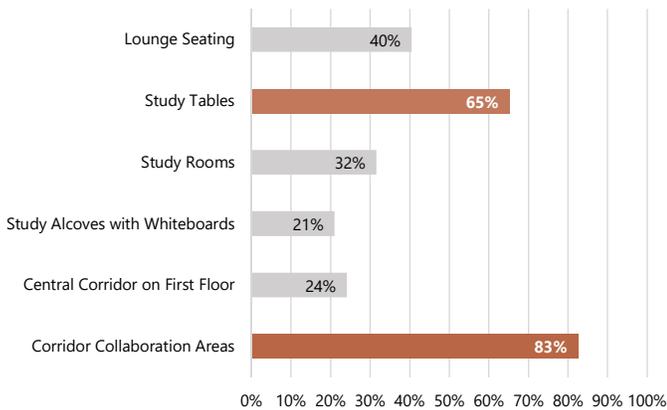
When small groups of 2 to 3 students come to engage in informal learning at the A.G. Hill Center, the areas they will typically use include the central corridor area (33%), study alcoves with white boards (29%), and study rooms (27%). Those students who prefer to work alone will select a lounge area within the building (39%) or locate a study table (25%) to pursue their educational endeavors.



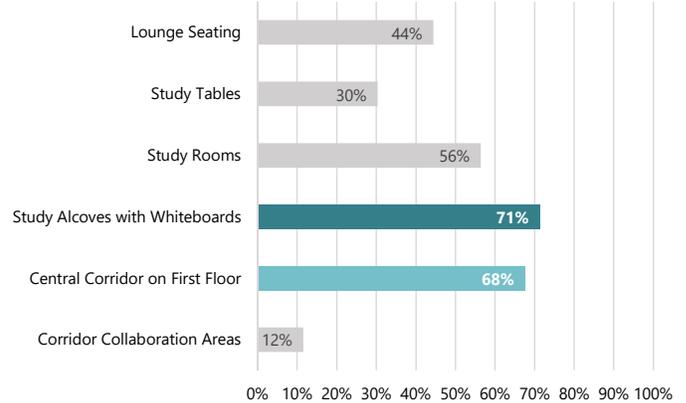
USE OF INFORMAL STUDENT SPACES



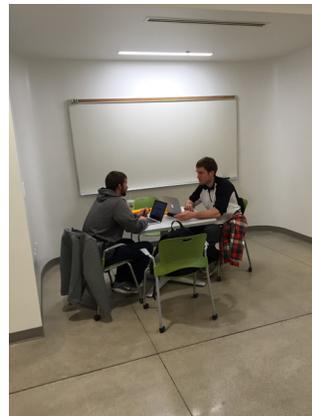
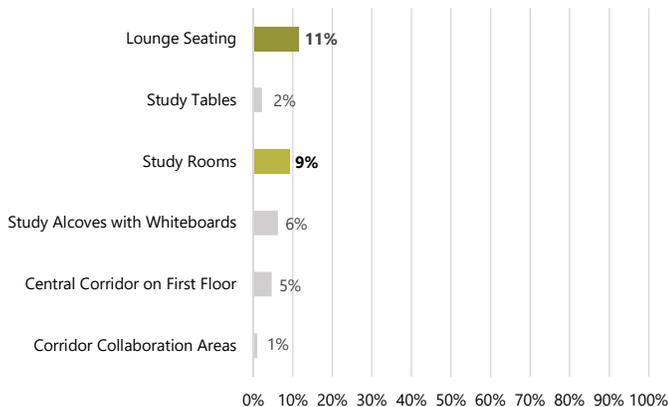
PREFERENCES FOR INDIVIDUAL STUDY



PREFERENCES FOR SMALL GROUP WORK



PREFERENCES FOR LARGE GROUP WORK



FOCUS GROUP SUMMARY

POST OCCUPANCY

Two student focus groups and two faculty focus groups were held on-site on March 24, 2017. Eight (8) students and six (6) faculty participated in the focus group sessions. The sessions were held in the ThinkTank room utilizing the GroupSystems software for focus group facilitation.

Primary themes identified in both student and faculty focus groups:

- The A.G. Hill Center has increased active learning capacity for STEM education.
- Change can be challenging to adapt to new space and/or pedagogies, but when faculty are open to change, the results are more successful for students and faculty.
- Frustration develops when technology is not working or equipment is not available when desired.
- Students actively seek spaces that are conducive for group work as well as individual study.
- Mobility within the classrooms, via chairs and table arrangements, increases student participation in learning activities.

focus groups

Themes and summary

Five (5) themes emerged from the faculty and student focus groups. The following comments are excerpts from the faculty and student focus groups that support these themes.

THEME 1: THE A.G. HILL CENTER HAS INCREASED ACTIVE LEARNING CAPACITY FOR STEM EDUCATION.

Interactive classrooms have allowed an impressive change in pedagogy. There used to be a "delivery" approach in fixed seating classrooms. Now we have the capacity to have students much more richly involved in demonstrating their learning on the spot during instruction.

Increased active-learning capacity of NDSU, along with other initiatives.

Much more access to the students. We can now physically get to every student where we may have only had access to 10% before. Students have said they "can't hide" anymore.

Have used problem-based learning for 30 years, but the Center allows this to happen much more effectively and efficiently than before. It is the first time to actually have a classroom with this type of teaching in mind.

Round tables are great for groups to interact with each other.

In the fixed seating, if the instructor is not able to see the work of each student as they are working, that would be an impediment. We have lots of those already on campus!

I think that NDSU's approach to STEM education is evolving from a very teacher-centered approach to a learner-centered approach. When I came to NDSU 8 years ago, very few faculty knew about active learning pedagogies and learner-centered approaches, and now many classes are implementing these approaches, and there seems to be more conversations going on around campus about these approaches.

One of the main influences of the STEM building is that it has provided a space where instructors can effectively and easily implement active learning approaches, and it has provided a place where others can witness active learning in action.

The active learning classrooms have allowed me to fully implement my active learning pedagogies. ...As the class is being taught, it is in a really exciting atmosphere. With this classroom, I have seen improvement in student grades and on surveys students indicate that they really learn a lot from each other. I think that this extra peer instruction has really helped the lower performing students, and we are currently analyzing data to measure this.

I really like how the whiteboards run across the whole room so every group has a chance to show their work.

It's a lot more energetic and alive. It is not just your average learning facility it really does push towards students completing their goals.

STEM Center allows us to collaborate with other classmates from the way the classrooms are set up, and so everyone gets more of a hands on experience.

We sit at a table of 9, which could make the class less intimidating for some people. It also makes it easier to work with other people, when we have in-class activities.

THEME 2: CHANGE CAN BE CHALLENGING TO ADAPT TO NEW SPACE AND/OR PEDAGOGIES, BUT WHEN FACULTY ARE OPEN TO CHANGE, THE RESULTS ARE MORE SUCCESSFUL FOR STUDENTS AND FACULTY.

They took some getting used to. I use powerpoint presentations for my classes and the layout was sometimes difficult for me to make eye contact with all of the students when I wanted to discuss the material.

focus groups

Themes and summary (continued)



I have found no difficulties in the scaleup room. I went in wanting change and ran with it. The first semester I tried many different approaches.

I prefer the traditional classroom. I feel that it is easier to present material to the students.

It has a very conducive environment which boosts willingness to learn.

I have always enjoyed science courses, but the A.G. Hill building makes it a lot easier to learn and work together with my peers, making class less strenuous and more enjoyable.

I think the layout of the classroom really helps with student-faculty interactions because the instructors in the middle of our class so she can see which students need help.

THEME 3: FRUSTRATION DEVELOPS WHEN TECHNOLOGY IS NOT WORKING OR EQUIPMENT IS NOT AVAILABLE WHEN DESIRED.

I have taught in 2 different rooms. One had pod chairs and was great. We were able to use flexible groups in many different ways. Problem is that on 3 of the walls, there are no places for students to share their work. Screens had to be put up to use the white boards. Need to either rotate the projectors or add more screens. The other is the larger scaleup room. I have stated that I will not teach in another classroom after being there. The white boards are what we need. I can make do without the projectors but the white boards have made huge improvements.

The use of microphones for Tegrity recording and, at the same time, using them for loud speakers in the room has been difficult.

The only thing I have found lacking was no microphones for the students to use during class discussions, keeps the teacher moving; perhaps that is positive!

My one issue has been that there are no extra chairs in the classroom. I often have waitlisted students attend class, in case they eventually make it in -- but there's no space for them to sit. Similarly, if I have someone observe the class (as part of a teaching evaluation, e.g.), they have no chair to sit in. A few extra chairs might be useful.

If there is a TA or LA in the course, they don't have a space to put things. We pile our bags and coats in the lost and found box.

Sometimes the projectors don't work or the document camera doesn't focus.

THEME 4: STUDENTS ACTIVELY SEEK SPACES THAT ARE CONDUCTIVE FOR GROUP WORK AS WELL AS INDIVIDUAL STUDY.

It is a great environment for studying, I see many students working hard on the white boards and it interests me. I would like to learn what they are learning because it is something that I think is great.

I honestly love the study rooms, but the fact that they are so limited makes it almost impossible to get one. I think study rooms on each floor would be nice.

Come here to study with peers and go over projects because I personally think that it's a lot more open and has more freedom than the library.

I usually go there to meet our research group members and discuss.

focus groups

Themes and summary (continued)



I go to Glenn Hill in my free time because its very quiet and I like the people around me because most of them are in my classes.

For our study group, we usually meet in the lounge, and then move to the study room from there. As for the study rooms, I have used those to work on homework.

THEME 5: MOBILITY WITHIN THE CLASSROOMS, VIA CHAIRS AND TABLE ARRANGEMENTS, INCREASES STUDENT PARTICIPATION IN LEARNING ACTIVITIES.

As long as there are spaces for the students to move AND make their learning visible we are going in the right direction.

The move from stationary (sometimes bolted-on-rails) chairs to movable chairs and tables had been great for teaching problem-based/student group work-based courses.

What it takes for students to move around. It's easier in some classrooms, but we make it work in all classrooms using the floor, turning around in fixed seating, etc.

The moveable seats and desktops at the same level (for every two rows) in 122 make group work much easier. I have not incorporated this in a lecture-type room before.

I use many more small group activities as the students can move to groups readily.

The moveable tables with different possible setups for teams of different sizes. The fact of not being designed for the teacher to be at the center of activity.

The white boards on the walls... Can have a group work on the board and then a different group comes and adds to the model/diagram, etc.

I now try to design as many problems as possible that have the students go to the whiteboards. In addition, I will now hand out different versions of a problem to different groups throughout the room. After the groups finish their own problems, they then go to a neighboring groups problem and critique and correct it. This really allows students the opportunity to think about and internalize the material in multiple ways.

The arrangement of the chairs and tables makes it easier for my classmates to fall into groups and work as a team.

They provide a better environment to work with other students, whether that's sitting at a table and comparing ideas with them or using the white boards or other screens to express your ideas.

The tables in the large classrooms instead of seats in a lecture hall make it easier for students to work together. The whiteboards and screens make it easier for instructors to communicate information to the students.

I love that chairs are movable because it allows us to better connect and makes it easier to move around and share ideas.



ThinkTank Session #131:

Faculty 1 NDSU A Glenn Hill Center POE

Session Start: Mar 24, 2017 1:45 PM

Session End: Mar 24, 2017 1:45 PM

Agenda

1. Warm up and opening questions
2. Classrooms
3. Labs

focus groups

Transcript: Faculty Group 1

Page 2 of 6

Warm up and opening questions

1.1. What is your ideal vacation?

- 1.1. Somewhere with water!
 - 1.1. *Ocean, ideally, for me.*
 - 2.2. *Fargo during the spring flood??*
- 2.2. A vacation. Any vacation.
- 3.3. beach, beer, book
 - 1.1. *Any special beach?*
 - 2.2. *What kind of beer?*
 - 3.3. *island beach*
- 4.4. Railroad tour of Alaska
- 5.5. Sun and water

2.2. Please briefly describe your role and tenure with NDSU.

- 1.1. Professor, 20 years
- 2.2. Faculty member. 26 years in various levels.
- 3.3. Associate professor in dept. of communication; at NDSU since 2008
- 4.4. Professor, 47 years
- 5.5. Visiting Professor in the Electrical and Computer Engineering Department - 2nd semester. Instructor for 3 years before this appointment.

3.3. Please describe NDSU's approach to STEM education.

- 1.1. Generally pretty good. NDSU offers a wide variety of classes that target different skill levels.
- 2.2. Increasing focus on STEM education. Focus on both academic careers and industry careers.
- 3.3. Basis is land-grant university. This is difficult to put down briefly.
- 4.4. I believe it is emerged with an evidence-based pedagogy in recent years. Previously it was interpreted as teaching courses in a STEM content area.
 - 1.1. *Good point -- there has been a distinct emphasis on student-centric/evidence-based teaching in STEM, including resources (OTL, etc.)*
- 5.5. Student Engagement, Student First across disciplines

4.4. In what ways has the A. Glenn Hill Center influenced STEM Education at NDSU.

- 1.1. It has provided more space for labs. This has freed up space for graduate students.
 - 1.1. *do you meant that this has allowed more space in other buildings for graduate students to pursue research outside of Hill building?*
 - 1.1. *That is correct.*
- 2.2. Increased active-learning capacity of NDSU, along with other initiatives.
- 3.3. It has given STEM visibility; It has given STEM teachers state of the art facilities for engaging students in their discipline.
- 4.4. I currently teach a non-STEM class in the building, so this may be of limited usefulness. But: the move from stationary (sometimes bolted-on-rails) chairs to movable chairs and tables has been great for teaching problems-based/student group work-based courses.
 - 1.1. *As long as there are spaces for the students to move AND make their thinking visible we are going in the right direction. The small white boards are of great use in places where the white boards are limited to behind the screens. That is a major design flaw!*
- 5.5. Interactive classrooms have allowed an impressive change in pedagogy. There used to be a "delivery" approach in fixed seating classrooms. Now we have the capacity to have students much more richly involved in demonstrating their learning on the spot during instruction.
 - 1.1. *Agree*

focus groups

Transcript: Faculty Group 1

Page 3 of 6

Classrooms

1.1. Please describe your initial impressions specific to the active learning classrooms in the A. Glenn Hill Center.

1.1. I have not taught in the scale-up rooms, yet, but they look functional.

2.2. Airy. Bright. LOTS of whiteboard space, both behind me and on small whiteboards for students. Flexible configuration. And this may be a minor point, but multiple doors to go in/out of classroom somehow create a more relaxed "feel".

1.1. *I agree, they are all inviting, bright, and airy.*

3.3. My impressions are very positive. These classrooms provide the best teaching facilities experienced

1.1. *There's definitely that difficult-to-measure morale boost for faculty when we get to walk into state-of-the-art classrooms. Very different from some of the other spaces on campus, that have the opposite effect.*

4.4. They took some getting used to. I use powerpoint presentations for my classes and the layout was sometimes difficult for me to make eye contact with all of the students when I wanted to discuss the material.

1.1. *what have you done to address the challenge of teaching with powerpoint and making eye contact with students?*

1. 1.1. *I don't think the interactive rooms were designed to just use powerpoints. I think there were designed to be interactive where the instructor is not the focal point. At least that is my impression.*

2. 1.2. *I did alot of walking around.*

2.2. *The courses I taught are Engineering Ethics. This almost always requires some kind of presentation so that the students could see the concepts that were being discussed. The example would be how are accidents catagorized?*

5.5. I have taught in 2 different rooms. One had pod chairs and was great. We were able to use flexible groups in many different ways. Problem is that on 3 of the walls, there are no places for students to show their work. Screens had to be put up to use the white boards. Need to either rotate the projectors or add more screens. The other is the larger scaleup room. I have stated I will not teach in another classroom after being there. The white boards are what we need. I can make do without the projectors but the white boards have made huge improvements

6.6. What about the layout was difficult? location of screen? Location of instructor station?

1.1. *I have found no difficulties in the scaleup room. I went in wanting change and ran with it. The first semester I tried many different approaches. I wish the instructor station were not in the center of the room. A corner would have been fine.*

2.2. *The only thing I have found lacking was no microphones for students to use during class discussions, keeps the teacher moving; perhpas that is postiive!*

3.3. *The use of microphones for Tegrity recording and, at the same time, using them for loud speakers in the room has been difficult.*

7.7. The use of microphones for Tegrity recording and, at the same time, using them for loud speakers in the room has been difficult.

1.1. *Some of the microphones in scaleup rooms are "tempermental" and don't always function. That seems like an easy fix.*

8.8. This is specific to the halls. We need to get something besides institutional white. Murals for the different disciplines. Allow the rooms to be filled with artwork if they are lab specific.

9.9. What are the criteria for scheduling into an active learning classroom? It appears as though some are used for "traditional" lecture while there are courses wanting to get into active learning spaces. Maybe a refresh of the criteria are needed.

2.2. Please indicate which classrooms you have had instruction experience with in the A. Glenn Hill Center.

1.1. 122

2.2. 126

3.3. 234

4.4. 330

5.5. 130/132

6.6. 206

7.7. 126, 122, 300, 326

thinktank 131: Faculty 1 NDSU A Glenn Hill Center POE
by GroupSystems

focus groups

Transcript: Faculty Group 1

Page 4 of 6

3.3. A previous Office of Teaching and Learning (OTL) faculty survey for the active learning classrooms indicated a variety of activities and technologies are utilized by faculty. Which learning activities and provided technologies are you using in the active learning classrooms?

- 1.1. The projector for Power Point presentations and DVDs
- 2.2. Students use the white boards every day.
- 3.3. Technologies: clickers, white boards, projector Activities: group-based case study work/discussion
- 4.4. For the multiple screens, multiple sources from lap top and document camera can be used simultaneously.
 - 1.1. *Should have added that to mine too. Use both screens for different input (though rarely, since it puts some students too far from screen)*
 - 2.2. *I think that may be room dependent?*
 1. 2.1. *Likely is, yes.*
- 5.5. Group work, Tegrity, Response system
- 6.6. Have not yet had students plug in and control their own screens, but they do use the microphones daily as well.
- 7.7. Groups of 3 are used

4.4. Please describe how you determine the most appropriate form(s) of instruction for a course?

- 1.1. Course content and learning objectives
 - 1.1. *Yes, these drive my instruction as well.*
 - 2.2. Experience; discussing with other faculty who have a strong pedagogy background; attending workshops/luncheons that discuss course types similar to mine.
 - 3.3. Most of my courses I use a lecture format. I try and get students to participate, but that can be very difficult sometimes.
 - 4.4. Many factors including how the discipline works in the real world, experiences of the students, comfort of teacher, course objectives, student outcomes...
 - 5.5. Course goals set the stage. What we want students to know/be able to do is set from the goals. Instructional activities to best demonstrate that doing is what determines the day-to-day lessons and use in the classrooms.

5.5. Which, if any, building features do you take into consideration when planning course activities and instruction?

- 1.1. What it takes for students to move around. It's easier in some classrooms, but we make it work in all classrooms using the floor, turning around in fixed seating, etc.
- 2.2. I try not to make activities/instruction dependent on building features, because it's learning goals/outcomes that should drive activities. I can use clickers, group work, etc. even in the worst classroom. That said, some of these activities are significantly facilitated by building features like large whiteboards, movable chairs, etc.
- 3.3. Can students get together to have a discussion - can they move around easily?
- 4.4. Many features, including flexibility of seating arrangements, technology available in assigned room, size of room
- 5.5. I won't teach in a room without white boards ever again.
- 6.6. I consider the availability and size of the white boards. Also I want to make sure that the computer and projector are functional.

6.6. Please describe a change, or changes, in your instruction technique for a course you have taught previously in a classroom other than those in A. Glenn Hill Center and are now teaching in a classroom located in A. Glenn Hill Center.

- 1.1. Not applicable. I have only taught Engineering Ethics in the A. Glenn Hill Center.
- 2.2. Much more access to students. We can now physically get to every student where we may have only had access to 10% before. Students have said they "can't hide" anymore.
- 3.3. Same answer as last question -- I try to keep instruction activities consistent, because I don't always get scheduled in A. Glenn Hill. But I notice that some of the activities are more successful in the right space; e.g., when students can face each other around a table, or when I can freely move between groups and engage with them.
- 4.4. The moveable seats and desktops at the same level (for every two rows) in 122 make group work much easier. I have not incorporated this in a lecture-type room before.
 - 1.1. *Haven't been in that room yet so glad to hear it works well.*
- 5.5. I use many more small group activities as the students can move to groups readily. If large fixed seating

focus groups

Transcript: Faculty Group 1

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auditorium it was large groups where all many not have had to participate.

6.6. Have used problem-based learning for 30 years, but the Center allows this to happen much more effectively and efficiently than before. It is the first time to actually have a classroom with this type of teaching in mind.

1.1. *I'm so glad this was the impetus going in to the design rather than a retro-fit after.*

7.7. Which physical features of the classrooms, if any, are supporting collaborative learning?

1.1. The round tables and the moveable chairs.

1.1. *Each allows a different structure to be used.*

2.2. I have not used any collaborative learning methods.

3.3. Movable tables, movable chairs, fact that students face each other (less of a classroom/stare at teacher feel/expectation).

1.1. *Yes!*

4.4. In 122, the movable chairs and distance between rows make movement very easy for students.

5.5. The movable tables with different possible setups for teams of different sizes. The fact of not being designed for the teacher to be the center of activity.

6.6. the white boards on walls also. Can have a group work on the board and then a different group comes and adds to the model/diagram, etc

1.1. *I have seen an engineering faculty display the small white boards on the doc camera for whole class to see*

8.8. Which physical features of the classrooms, if any, are impeding collaborative learning?

1.1. None that I have experiences.

2.2. Nothing comes to mind.

3.3. None that I have experienced

4.4. I cannot think of any.

5.5. Can't really think of any.

9.9. Which types of furniture arrangements best support the learning outcomes for your class?

1.1. Small tables (4-6 seats), flexible arrangement.

2.2. I prefer the traditional classroom. I feel that it is easier to present the material to the students.

1.1. *Can you describe what you mean by traditional classroom?*

1. 1.1. *Similar to how this room is arranged.*

3.3. It depends upon the objective for the day. In the moveable chairs, we used pods of three, arranged for class debate along each wall, had group members randomly move. All are now possible.

4.4. The arrangement in 234, and perhaps others. The flexibility to accommodate teams of different sizes.

5.5. I like the arrangement - lecture with movable chairs - for my lecture class. I am looking forward to have a discussion based class in a scaleup room.

6.6. Round tables are great for groups to interact with each other

10. 10. In what ways are active learning classrooms supporting student-faculty interactions? - In what ways are active learning classrooms/any classroom in the building supporting student-faculty interactions?

1.1. Hard to think of how they are not. The instructor can easily get to every student.

2.2. Faculty can circulate between tables more freely. As somebody mentioned in an earlier comment, students can't hide -- which (I hope) makes them feel more engaged.

3.3. I do not feel that they provide any more support than a traditional classroom.

4.4. IN the fixed seating, if the instructor is not able to see the work of each student as they are working, that would be an impediment. We have lots of those already on campus!

5.5. More time for interaction with individual students. The prof seems more approachable than just the center of attention in a large lecture hall. The less deep, wide small lectures rooms also put the instructor closer to the student.

6.6. They support interactions by teams working together with space for teachers to walk and interact.

focus groups

Transcript: Faculty Group 1

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Labs

- 1.1. Please describe your initial impressions specific to the labs in the A. Glenn Hill Center.
 - 1.1. I have not used or been in any of the labs.
 - 2.2. I have not taught in the lab rooms, only the active learning rooms
 - 3.3. They look impressive, but I have not taught in them
 - 4.4. I teach in 206. The tables are heavy to move to allow students to make a smaller work surface where we try to separate them. There are ample power sources. Maybe too many! It would have been nice for the projector to be turned 90 degrees to not be on top of the white boards. That will be a request I continue to make!
- 2.2. Does your lab course have a group or team component?
 - 1.1. we work in groups of 2 and 4
 - 2.2. n/a (no lab course)
 - 3.3. The students are broken into groups of 3.
 4. 2.1. If yes, which physical features of the lab, if any, are supporting collaboration for these teams?
 - 1.1. the groups of 4 face each other and the groups of 2 are side by side
 5. 2.2. If yes, which physical features of the lab, if any, are impeding collaboration for these teams?
- 3.3. How has the non-departmental designation of the labs supported (or deterred) STEM faculty goals?
 - 1.1. It makes it hard. We've had "lecture" courses in the lab room. Taking down and putting up lab materials on a daily basis is not feasible. There are chemicals/specimens that should not be accessible outside the specific courses.
 - 2.2. There has some problems with equipment being damaged or misplaced.
 - 3.3. yes, we've had things go missing or be moved to unknown locations!
- 4.4. Any additional comments specific to the classrooms or labs?
 - 1.1. Nothing comes to mind.
 - 2.2. My one issue has been that there are no extra chairs in the classroom. In the first two weeks, I often have waitlisted students attend class, in case they eventually make it in -- but there's no space for them to sit. Similarly, if I have someone observe the class (as part of a teaching evaluation, e.g.), they have no chair to sit in. A few extra chairs along the walls might be useful. [This is for room 126 -- I'm not sure if it applies to other rooms]
 - 3.3. agreed! THIS isn't just for lab rooms, it is also for the other rooms as well. And if there is a TA or LA in the course, they don't have a space to put things. We pile our bags and coats in the lost and found box.



ThinkTank Session #132:

Faculty 2 NDSU A Glenn Hill Center POE

Session Start: Mar 24, 2017 1:45 PM

Session End: Mar 24, 2017 1:45 PM

Agenda

1. Warm up and opening questions
2. Classrooms
3. Labs

focus groups

Transcript: Faculty Group 2

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Warm up and opening questions

- 1.1. What is your ideal vacation?
- 2.2. Please briefly describe your role and tenure with NDSU.
 - 1.1. I am an Associate Professor of Practice in the Department of Biological Sciences.
- 3.3. Please describe NDSU's approach to STEM education.
 - 1.1. I think that NDSU's approach to STEM education is evolving from a very teacher centered approach to a learner centered approach. When I came to NDSU 8 years ago, very few faculty knew about active learning pedagogies and learner centered approaches, and now many classes are implementing these approaches, and there seems to be more conversations going on around campus about these approaches.
- 4.4. In what ways has the A. Glenn Hill Center influenced STEM Education at NDSU.
 - 1.1. I think one of the main influences of the STEM Building are that it has provided a space where instructors can effectively and easily implement active learning approaches, and it has provided a place where others can witness active learning in action. In addition, the new lab facilities have greatly increased the students experience in the lab courses.

Classrooms

1.1. Please describe your initial impressions specific to the active learning classrooms in the A. Glenn Hill Center.

1.1. The active learning classrooms have allowed me to fully implement my active learning pedagogies. I teach General Biology I in the large SCALE-UP classroom (130/132) and the students experience in this classroom has been drastically improved from what it was in Gate City Auditorium. Students have the opportunity to talk about Biology with each other and they have the opportunity to work through problems on the white board. As the class is being taught it is a really exciting atmosphere. With this classroom, I have seen improvement in student grades and on surveys students indicate that they really learn a lot from each other. I think that this extra peer instruction has really helped the lower performing students, and we are currently analyzing data to measure this.

2.2. Please indicate which classrooms you have had instruction experience with in the A. Glenn Hill Center.

1.1. AG Hill 130/132, 208, 214, 216, and I manage the Biology Prep Room in Room 212

3.3. A previous Office of Teaching and Learning (OTL) faculty survey for the classrooms indicated a variety of activities and technologies are utilized by faculty. Which learning activities and provided technologies are you using in the active learning classrooms?

1.1. The most important thing that I use in 130/132 is the white boards. I often have all 135 students in this course all up at the white boards at the same time working on problems. It is really exciting to witness. A survey that I conducted of 270 of my students indicated that only about 60% of them had a computer that had the type of connection that could plug into the tables, so we have not used the technology provided at the individual tables.

4.4. Please describe how you determine the most appropriate form(s) of instruction for a course?

1.1. I use Backward Design. I decide on my course objectives and goals before the class begins, and then I determine what I need to do in class, each class period, in order for my students to meet those goals and objectives. The actual class time intersperses short lectures with active problems that the students work on.

2.2. I try to design as many activities as possible that require the students to go to the white boards and work on problems. This makes their thinking visible to me and my learning assistants and we have immediate formative feedback about how well they are meeting the learning objectives.

5.5. Which, if any, building features do you take into consideration when planning course activities and instruction?

6.6. Please describe a change, or changes, in your instruction technique for a course you have taught previously in a classroom other than those in A. Glenn Hill Center and are now teaching in a classroom located in A. Glenn Hill Center.

7.7. Which physical features of the classrooms, if any, are supporting collaborative learning?

1.1. I have already mentioned the use of the white boards in my previous answers. I now try to design as many problems as possible that have the students go to the whiteboards. In addition, I will now hand out different versions of a problem to different groups throughout the room. After the groups finish their own problems, they then go to a neighboring groups problem and critique and correct it. This really allows students the opportunity to think about and internalize the material in multiple ways.

8.8. Which physical features of the classrooms, if any, are impeding collaborative learning?

9.9. Which types of furniture arrangements best support the learning outcomes for your class?

10. 10. In what ways are active supporting student-faculty interactions?

focus groups

Transcript: Faculty Group 2

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Labs

- 1.1. Please describe your initial impressions specific to the labs in the A. Glenn Hill Center.
- 2.2. Does your lab course have a group or team component?
 - 1.1. The labs are spacious and provide ample bench space. They really allow the students to be able to move around the lab efficiently and increase the safety of the lab. Students love these very open, light filled spaces.
 - 2.2. Yes, students often work in teams.
3. 2.1. If yes, which physical features of the lab, if any, are supporting collaboration for these teams?
 - 1.1. The students sit at tables with four students. This allows for more collaboration then sitting at a long lab bench. Also, there is alot of bench space around the perimeter, so materials can be placed on the benches and students can easily get the materials that they will need for their investigation and bring them back to there table.
4. 2.2. If yes, which physical features of the lab, if any, are impeding collaboration for these teams?
 - 1.1. I can't think of anything that impedes collaboration in the lab rooms.
- 3.3. How has the non-departmental designation of the labs supported (or deterred) STEM faculty goals?
 - 1.1. The way the building is being used, there is no cross-departmental use of the labs that are utilized by Biology.
- 4.4. Any additional comments specific to the classrooms or labs?
 - 1.1. We have 3 sinks in all of our labs and no paper towel dispensers. As a result we have a basket of paper towels at each sink that is constantly getting water splashed on it. Students need to wash their hands and we have never received a good answer to why we can't have paper towel dispensers. This is also true in the prep room.
 - 2.2. The air flow in AG HILL 130/132 is very poor. When that classroom is full with 132 students, 15 TVs turned on and 6 LED projectors, it begins to smell like a locker room. If you teach in that room after someone who has kept the doors closed, it can be really stifling. On the other hand, you usually cannot keep the doors open because that main atrium hallway is too loud. The air handling system in that room really needs to be investigated.



ThinkTank Session #133:

Student 1 NDSU A Glenn Hill Center POE

Session Start: Mar 24, 2017 3:30 PM

Session End: Mar 24, 2017 3:30 PM

Agenda

1. Warm up and opening questions
2. Classrooms
3. Informal Spaces
4. Labs

focus groups

Transcript: Student Group 1

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Warm up and opening questions

1.1. What is your ideal vacation?

1.1. someplace warm and sunny

1.1. *I agree my ideal vacation should be warm and sunny*

2.2. :)

2.2. Beach

1.1. *any special beach?*

3.3. Traveling around Europe

1.1. *Europe sounds great!*

4.4. Laying somewhere on a beach with water

5.5. sunshine

6.6. A place that has a lot of fun activities and beautiful scenery that differ from home

1.1. *What kind of activities?*

2.2. *its always nice to be away from home and see new things*

2.2. Please describe your enrollment status (full/part-time), major, years as a student at NDSU.

1.1. Full-time, first year, majoring in Pre-Pharmacy

2.2. Full time, Freshman of Civil Engineering

3.3. I am a full time student, major is BioChem, I am a Freshman, first year

4.4. Full, Civil and Environmental Engineering, Grad Student, Second year

5.5. Full time, first year, deciding between accounting and marketing

3.3. In what ways has the A. Glenn Hill Center influenced your opinion of STEM classes and/or STEM programs?

1.1. it has a very conducive environment which boosts willingness to learn

1.1. *Really does help and makes it a lot easier to try to learn*

2.2. I have always enjoyed science courses, but using the AGHill building makes it a lot easier to learn and work together with my peers, making class less strenuous and more enjoyable

3.3. yes

4.4. It is a great environment for studying, I see many students working hard on the white boards and it interests me. I would like to learn what they are learning because it is something that I think is great.

5.5. Glenn Hill Center provides state-of-the-art facilities for the Fluids lab that I am TA in.

6.6. Its is very open and student focused and that always impacts students performances

1.1. *yes it does*

2.2. *I agree if students see one another working hard in stem they will themself work hard too*

focus groups

Transcript: Student Group 1

Page 3 of 7

Classrooms

1.1. In what ways do you find the learning experience in the active learning classrooms unique compared to other classrooms on the NDSU campus? - In what ways do you find the learning experience in the active learning classrooms/classrooms unique compared to other classrooms on the NDSU campus?

1.1. The arrangement of the chairs and tables makes it easier for my classmates to fall into groups and work as a team

2.2. I think it is very technological than the other classes which makes it easier to communicate, and learn things the instructors throw at you.

3.3. They provide a better environment to work with other students, whether that's sitting at a table and comparing ideas with them or using the white boards or other screens to express your ideas

4.4. It's a lot more energetic and alive. It is not just your average learning facility it really does push towards students completing their goals

5.5. The labs are really nice, very spacious

1.1. *A lot better than other labs really does make it easier to learn and explore*

6.6. Group work and student participation are higher in the active learning classrooms.

2.2. Which physical features of the classrooms, if any, are supporting collaborative learning?

1.1. the columns of the chairs are arranged in twos, with each rows consisting of two individuals. This makes it easier for students to fall in as a team

2.2. Particularly in the labs, enough space has been provided to demonstrate and show different apparatus and use them.

3.3. The microphones on the desks are a nice touch and the tvs all around the rooms make it easier for people to follow along to what the instructor has to say. I really like how the whiteboards run across the whole room so every group has a chance to show their work.

4.4. The lighting and openness that is everywhere really stands out and helps. Also study tables that are set up in different corners are very nice as well

5.5. The tables in the large classrooms instead of seats in a lecture hall make it easier for students to work together. the whiteboards and screens make it easier for instructors to communicate information to the students

3.3. Which physical features of the classrooms, if any, are impeding collaborative learning?

1.1. None

2.2. None

3.3. None that i can think of

4.4. I think in the chemistry labs there should be sections for materials because students like to misplace instruments and it makes it hard to start our experiment

5.5. As a TA for Fluids Lab (room 114), I can tell that the abnormal noise created by air conditioner is really annoying for students.

4.4. Which types of furniture arrangements best support the learning outcomes for your class?

1.1. Tables with nine movable chairs

2.2. movable chairs

1.1. *How about the tables? Fixed round or movable rectangle?*

1. 1.1. *I prefer the fixed round tables*

2. 1.2. *Movable tables are ideal too, I think!*

3. 1.3. *Round because more people tend to connect better since there's more space*

3.3. I love that chairs that are movable because it allows us to better connect and makes it easier to move around and share ideas.

4.4. I like the large round tables with the moveable chairs because its much easier to communicate with the whole group.

5.5. A round Table consisting of about 8 to 10 students supports my learning outcome better and i personally like this arrangement pattern as one can be able to see each other students faces and discuss class topics easily with them

5.5. In what ways are classrooms supporting student-faculty interactions?

1.1. The TA's are located at the middle end of the class rooms, and this arrangement makes them not only

focus groups

Transcript: Student Group 1

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closer to the boards for explanations but also makes them easily accessible for any questions that students might have.

2.2. I think the layout of the classroom really helps with student faculty interactions because the instructors in the middle of our class so she can see which students need help

3.3. In the classroom i'm in, there are many LAs available for students to ask questions. The openness of the classroom allows students to freely raise their hands and ask the instructors questions. The openness also allows the instructor to move around the classroom during the lecture to better see the students and communicate with them

1.1. *Can you define LAs*

1. 1.1. *Learning assistants, basically the same as a teaching assistant*

2. 1.2. *Typically undergraduates*

3. 1.3. *is a learning assistant, someone who assists the instructor in questions.*

4.4. Labs are very spacious which allows movements to be easier especially if the instructor is walking around or supervising. Also the classrooms are nice since the teacher is in the middle

5.5. Also the instructor has complete control of the classrooms technology so he or she can show the content they want quickly.

6.6. There are computers for completing goals and assignments and working together in team as with these computers help students to discuss, find their strengths and weaknesses. I as an example, am not really a computer literate so this pattern helps.

6.6. **Any additional comments specific to the classrooms?**

1.1. Great environment, love the technology it helps very much in learning.

2.2. I feel that students should be urged more to clean up after experiments. Some students put in great effort to make sure the place is tidy after experiments but others don't really care and just leave the work to the rest of the team members

3.3. They are honestly great. Beautifully designed and structured and and awesome technology everywhere.

4.4. The technology available and increased ability to communicate with my peers has due to the ways the classrooms are set up has enhanced my learning in those classes

5.5. I think Fluids Lab provides a great opportunity for students to get familiar to fluids dynamics; however, it needs more shelves and cabinets and noise problem need to be fixed!

6.6. Suggestion 2 also helps for prolonged usage and longevity of these facilities

focus groups

Transcript: Student Group 1

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Informal Spaces

1.1. For what purpose(s), if any, do you come to the A. Glenn Hill Center when you do not have scheduled classes?

1.1. I use the study rooms there to study with classmates

1.1. *lookint at the floor plan provided which study rooms do you use and what features do you find the most beneficial?*

1. 1.1. *I usually use rooms 116, 118, 120, 136, 138, or 140 depending on which is available*

2.2. *I honestly love the study rooms, but the fact that they are so limited makes it almost impossible to get one. I think study rooms on each floor would be nice. I also see people just sitting and watching movies in these rooms which is not really fair to the people that want to get work done and study.*

2.2. to read, because it is very quiet. To relax and reflect as i personally enjoy the view and the serene from especially from the 3rd floor.

3.3. Come here sometimes to study with peers and go over projects because I personally thing that it's a lot more open and has more freedom than the library.

4.4. Free wifi

5.5. I go to Glenn Hill in my free time because its very quiet and I like the people around me because most of them are in my classes. I also the third floor as a study space when I am studying for either Chem or Bio.

6.6. I usually go there to meet our research group members and discuss.

1.1. *is there a particular place you meet...refer to floor plan provided*

1. 1.1. *Study rooms are very good places to meet.*

2. 1.2. *3rd floor because lot more private and not as many people walking in and out*

2.2. *plus the scenery is really nice (when snow isn't everywhere)*

7.7. to admire its great construction

2.2. In what ways have you have utilized the informal student spaces, such as the lounges and collaboration rooms?

1. 2.1. How many people?

1.1. i usually study solo

2.2. usually 2-4

3.3. Usually between 2 and 4

4.4. 3-4

5.5. I usually do solo studying, but when I have projects like in Stats I invite my group members (3-5) and we try to get a study room if possible (Highly unlikely).

6.6. Is it highly unlikely because the rooms are unavailable or because the students are not available to meet you?

1.1. *Never so many options that we will always find a nice place to get work done*

2.2. *Usually its the rooms that are not available, but we just adapt and try to find any other space that we can occupy like the 2nd and 3rd floor lounges.*

3.3. *rooms are often unavailable. It would be nice if there were more study rooms*

4.4. *Although rooms can be unavailable sometimes, one could still find quiet study rooms. Its a question of the patience to search for one*

7.7. i feel informal study rooms are always available. its always a question of patience to search

2. 2.2. What was the desired purpose?

1.1. projects and upcoming tests

2.2. a quiet place without distractions to get tests, assignments, or projects completed

3.3. To catch up on school work

4.4. We just go to get our work done asap and just study for upcoming exams.

3. 2.3. How long did you use the space?

1.1. usually an hour or two

2.2. anywhere from 1-3 hours depending on what we're working on

3.3. an hour

4.4. 2 hours tops

5.5. If I have a class in Glenn Hill I usually stay for 2-4 hours because i get comfortable and don't wanna get

focus groups

Transcript: Student Group 1

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up.

4. **2.4. Why did you choose that space over another space in the building or on campus?**

1.1. It gives us more freedom and we don

2.2. less distractions versus an open space where people usually walk from time to time

3.3. and we don't feel so contained plus less noise around

4.4. suitable environment for studying

5.5. I live in Dinan Hall which is just south of the AG Hill building. It's closer than many other buildings on campus, it's quiet, and there are very few distractions.

6.6. It is nice and we are used to it now.

3.3. **Any additional comments specific to the informal spaces?**

1.1. It would be nice if there were more study rooms, maybe a couple on each floor

2.2. Other than study rooms everything seems to be awesome

focus groups

Transcript: Student Group 1

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Labs

- 1.1. Please describe your initial impressions specific to the labs in the A. Glenn Hill Center.
 - 1.1. Ooh my goodness. It's a Masterpiece
 - 2.2. Very spacious and well put together
 - 3.3. The labs are nice. They are pretty spacious which makes moving around much easier
 - 4.4. Opportunities to learn new things
 - 5.5. I thought the chem lab spaces were super cool because it looks like an actual lab with the filtration devices and the long lab tables.
 - 6.6. Its one of the very many buildings whose construction just stands out
 - 7.7. I could come here every day of my life
- 2.2. Does your lab course have a group or team component?
 - 1.1. Yes, we don
 - 2.2. yes
 - 3.3. Yes, we do
 - 4.4. We don't really have any features in labs other than the long lab tables.
 - 1.1. do you do any type of group or team work?
 - 1.1. Yes we are paired into groups of four and the tables suit our groups nicely.
 5. 2.1. If yes, which physical features of the lab, if any, are supporting collaboration for these teams?
 - 1.1. the computers.
 - 2.2. yes the long tables help us work together and comunicate better as a group
 - 3.3. The shelves
 - 4.4. The lab tables make it easy to work in groups of 2, 4, or larger. Because the lab is open and spacious, it's easy for the lab instructor to move around and answer questions the students may have. Students are also able to move around easily which makes working together easier
 - 5.5. The long lab tables are really nice we are usually put into groups of four two sit on one side and the other two on the other side.
 6. 2.2. If yes, which physical features of the lab, if any, are impeding collaboration for these teams?
 - 1.1. none
 - 2.2. no
 - 3.3. No
 - 4.4. No
- 3.3. Any additional comments specific to the labs, classrooms, or informal spaces?
 - 1.1. I like the spaces for our backpacks



ThinkTank Session #134:

Student 2 NDSU A Glenn Hill Center POE

Session Start: Mar 24, 2017 3:30 PM

Session End: Mar 24, 2017 3:30 PM

Agenda

1. Warm up and opening questions
2. Classrooms
3. Informal Spaces
4. Labs

focus groups

Transcript: Student Group 2

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Warm up and opening questions

1.1. What is your ideal vacation?

1.1. going to bora bora

1.1. *I would love to go there too!*

2.2. my ideal vacation would be at any beach!

1.1. *true*

2.2. Please describe your enrollment status (full/part-time), major, years as a student at NDSU.

1.1. full time, biology major(pre Med), freshman

2.2. full time, social work, and my second year.

3.3. In what ways has the A. Glenn Hill Center influenced your opinion of STEM classes and/or STEM programs?

1.1. Made me have a better idea of STEM! since my major isn't in that field of studies.

2.2. stem center allows us to collaborate with other classmates from the way the classrooms are set up, and so everyone gets more of a hands on experience.

focus groups

Transcript: Student Group 2

Page 3 of 5

Classrooms

- 1.1. In what ways do you find the learning experience in the active learning classrooms unique compared to other classrooms on the NDSU campus?
 - 1.1. We sit at a table of 9, which could make the class less intimidating for some people. It also, makes it easier to work with other people, when we have in class activities.
 - 2.2. To me is the size of the classrooms, and the way some of the classrooms are designed, like the tables.
 - 1.1. *Could you elaborate on the size of the classrooms? What about that helps with the learning?*
 1. 1.1. *They're usually a little bit smaller than other lecture halls, and has a feel of a small class due to the circular tables*
 2. 1.2. *it helps to communicate easier with each other,*
 3. 1.3. *and get help if needed from one another*
- 2.2. Which physical features of the classrooms, if any, are supporting collaborative learning?
 - 1.1. The smaller tables, the microphones and the projectors across the room
 - 2.2. The tables, which make it easier for students to communicate with each other
- 3.3. Which physical features of the classrooms, if any, are impeding collaborative learning?
 - 1.1. Some times the projectors don't work or the document camera doesn't focus. It would also be better if the classrooms were even smaller.
 - 2.2. i've only had two classes, and i never saw or had an problems in there.
- 4.4. Which types of furniture arrangements best support the learning outcomes for your class?
 - 1.1. the comfort of the setting, like the chairs in some of them.
 - 2.2. support the back, and also comfortable to sit on, but also up right to pay attention
- 5.5. In what ways are classrooms supporting student-faculty interactions?
 - 1.1. The instructor is in the middle of the classroom, so it makes it easier to ask them questions, and it also makes it easier for them to see you when you have a question or need help.
 - 1.1. *i agree with that*
 - 2.2. the tools of high tech they have in the classrooms.
- 6.6. Any additional comments specific to the classrooms?
 - 1.1. I think more classrooms at NDSU should be set up that way

focus groups

Transcript: Student Group 2

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Informal Spaces

1.1. For what purpose(s), if any, do you come to the A. Glenn Hill Center when you do not have scheduled classes?

1.1. I like the natural lighting in the building, and because there are study rooms and white boards available

2.2. To study with other students, i like how they have tables and white boards in the hall ways.

2.2. In what ways have you have utilized the informal student spaces, such as the lounges and collaboration rooms?

1.1. For our study group we usually meet in the lounge, and then move to the study room from there. As for study rooms, I have used those to work on homework

2.2. Only used it there once to meet with a group for a class project. But it's good to know we have them there

3. 2.1. How many people?

1.1. 10

2.2. 4

4. 2.2. What was the desired purpose?

1.1. Chemistry class study session

2.2. class project

5. 2.3. How long did you use the space?

1.1. probably 15 minutes

2.2. 40 minutes to an hour

6. 2.4. Why did you choose that space over another space in the building or on campus?

1.1. Because it's in the same building that we have our study classroom in later on, and its the building we have our chemistry lecture in

2.2. because its where we have the class.

3.3. Any additional comments specific to the informal spaces?

1.1. The natural lighting of the building is definitely something that attracts people to go, and the location(next to Memorial union)

focus groups

Transcript: Student Group 2

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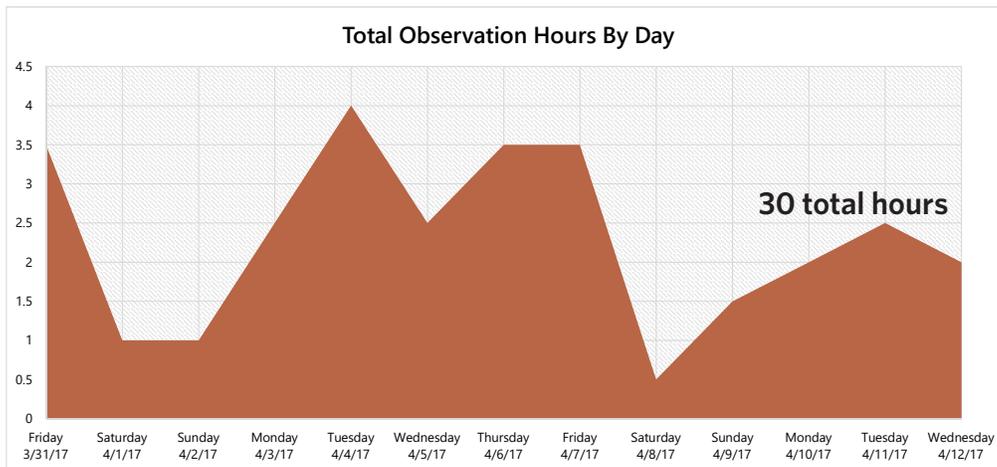
Labs

- 1.1. Please describe your initial impressions specific to the labs in the A. Glenn Hill Center.
 - 1.1. I like the labs, since they're designed to hold about 24 students only
 - 2.2. i didn't take lab in that building.
- 2.2. Does your lab course have a group or team component?
 - 1.1. yes we do
 2. 2.1. If yes, which physical features of the lab, if any, are supporting collaboration for these teams?
 - 1.1. the tables are set up to hold 4 people, which is the same number as the group members
 3. 2.2. If yes, which physical features of the lab, if any, are impeding collaboration for these teams?
 - 1.1. I see none
- 3.3. Any additional comments specific to the labs, classrooms, or informal spaces?
 - 1.1. No

OBSERVATIONS SUMMARY

POST OCCUPANCY

Thirty (30) hours of observations were completed over two weeks in late March to mid-April 2017. An observation template was utilized by students (qty 5) and faculty (qty 1) observers to document occupant behaviors and usage of informal student spaces.



observations

Findings

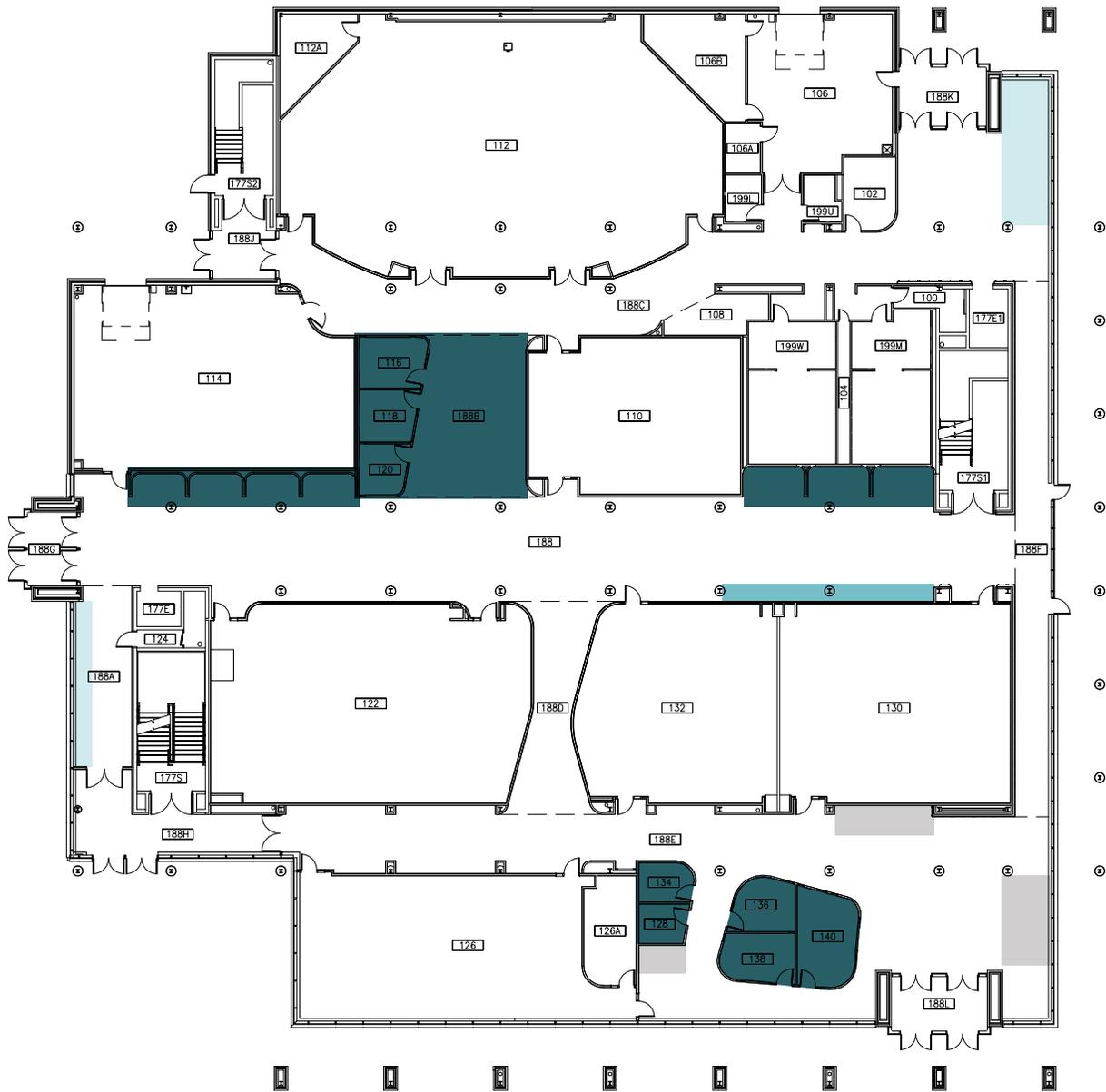
- The majority of collaboration spaces are used throughout the day. Areas most used are enclosed study rooms on first floor, table and chairs at the node by the auditorium on the first floor, and the lounge spaces on second and third floors.
- Only a few collaboration spaces in the building are not used or seldom used (e.g., a small lounge area on the first floor between two major entrances and on a circulation route).
- Study rooms are used most hours of the day and all days of the week, mostly for individual study.
- Students took ownership of the spaces by rearranging furniture to meet their needs. Examples included moving tables out of classrooms to the lounge space or moving lounge chairs closer to outlets (for use with a laptop). There appears to be a desire for more functional table surfaces (to spread out materials and use a laptop) with a view (such as the view provided in the lounge areas on second and third floor).
- The main path of travel on first floor is between the south entry and west entry. Tours with perspective students were often observed.
- The lounges on second and third floors are frequently used for studying or taking a break between classes. Small study groups utilize the lounge spaces to meet as well as individuals looking for a quiet place to study.
- The building is used by students seeking study space as an alternate to the student union or library. The weekends were busier than expected, and often had spaces “claimed” by students for long durations using personal items.
- Some students opt to use unoccupied classrooms as group study space, occasionally using the monitors and/or white boards.
- First-floor study alcoves located along the central corridor with white boards were frequently used by small groups.

observations

Utilization of informal spaces

OBSERVED UTILIZATION

- Highest Utilization
- Moderate Utilization
- Less Frequent Utilization
- Minimal Utilization



FIRST FLOOR

NOT TO SCALE



observations

Utilization of informal spaces

OBSERVED UTILIZATION

-  Highest Utilization
-  Moderate Utilization
-  Less Frequent Utilization
-  Minimal Utilization



SECOND FLOOR

NOT TO SCALE

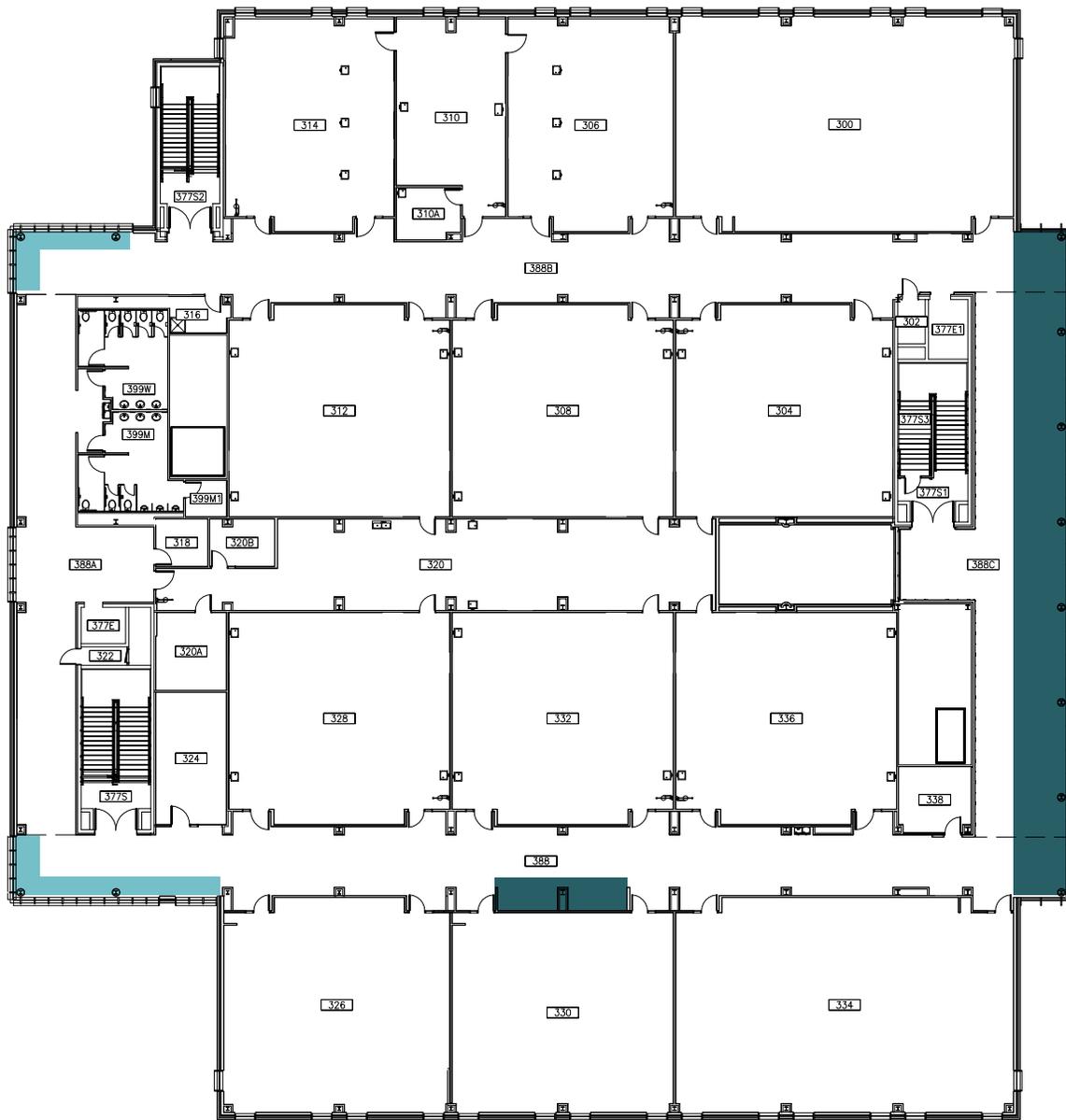


observations

Utilization of informal spaces

OBSERVED UTILIZATION

-  Highest Utilization
-  Moderate Utilization
-  Less Frequent Utilization
-  Minimal Utilization



THIRD FLOOR

NOT TO SCALE



**NORTH DAKOTA STATE UNIVERSITY
A. GLENN HILL CENTER**

Study completed by BWBR with approval and participation of North Dakota State University. For questions, please contact:

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