



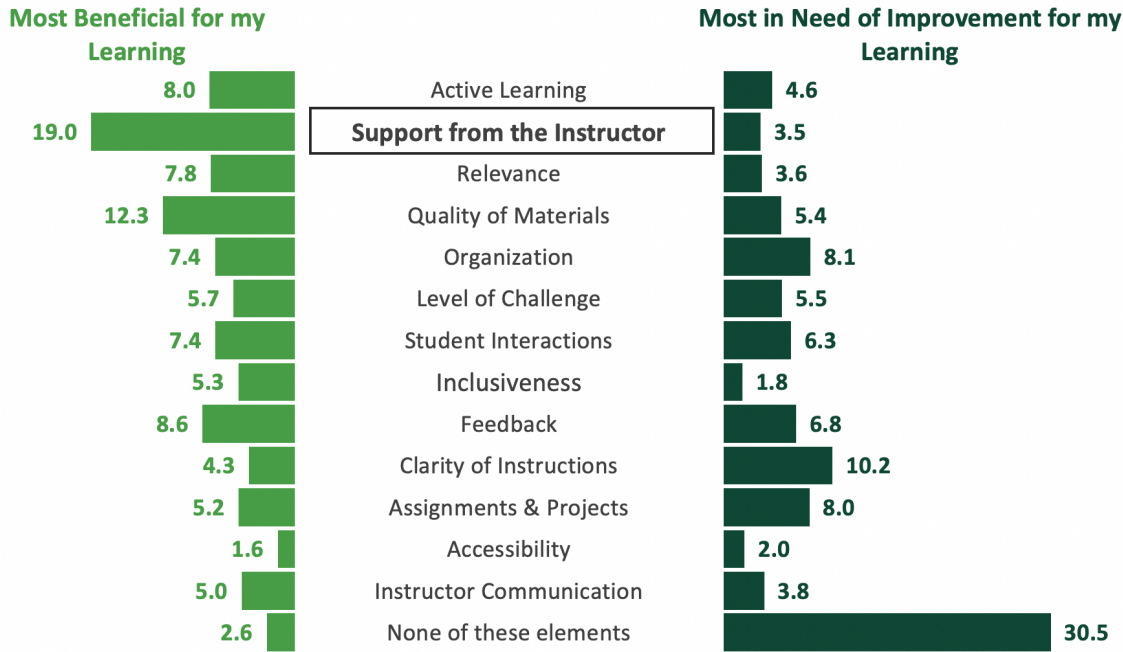
Using Machine Learning to Understand Student Perspectives on Instructor Support:

An Analysis of the Student Experience Survey

The new UO Student Experience Survey (SES) asks open-ended questions about 13 individual teaching practices. For each course, each student selects the single teaching practice they consider most beneficial to their learning and a single teaching practice that needs improvement in order to support their learning, with prompts to leave textual comments about both answer choices. Therefore, student comments represent perspectives on when a teaching practice is either the most salient positive or negative teaching practice for their learning. This report focuses on “**The support from the instructor,**” one of the teaching practices students can choose and comment on.

To contextualize the student comments related to support from the instructor, a separate survey question asks all respondents to indicate if the support from the instructor is beneficial, neutral, or needing improvement for their learning. Across all SES responses from 2019-2021 (116,331 student responses), support is rated as needing improvement by 6.8% of respondents, as neutral by 16.0% of respondents, and as beneficial for learning by 77.2% of respondents.

Figure 1. Percent of Student Experience Survey comments about teaching practices selected as most beneficial and most in need of improvement.



From the 13 teaching practices, “**Support from the instructor**” is the most likely to be selected as the most beneficial for student learning. Support is selected as being “most beneficial for my learning” by 19% of respondents (21,841 student comments) and is selected as being “most in need of improvement for my learning” by 3.5% of respondents (3,525 student comments).¹

¹ This analysis includes SES responses from 2019-2021 representing 116,331 student responses from 14,413 courses and 2,866 individual instructors.

EXPLORING STUDENT COMMENTS

On average, student comments about support are relatively long among SES comments at 133 characters, roughly 26 words. Compared to student responses to other SES questions, comments about support frequently mention *available*, *willing*, and *responsive*, especially in relation to office hours, meetings, and email responses. Students describe instructors as *patient*, *kind*, *flexible*, *approachable*, *positive*, *encouraging*, and *accommodating*. More commonly used words can be found in Appendix A.

IDENTIFYING THEMES IN STUDENT COMMENTS

To identify themes from student responses, we used a hybrid approach combining traditional close reading with a statistical text-mining approach called Latent Dirichlet Allocation (LDA),² a topic modeling technique that identifies underlying themes in text by looking for latent groupings of features, in our case individual words. We used LDA as an exploratory tool to present an expert researcher with topics of student comments, which the researcher analyzed and synthesized into the themes presented here. The value of using LDA in this process comes from the neutrality of the algorithm's topic groupings, which offers the researcher fresh ways of looking at the data that are relatively unconditioned by their prior expectation about what themes are present in student responses. With LDA categorizations as a starting point, the researcher's human judgment and experience with UO student surveys are then crucial for integrating topic model results into a rich qualitative understanding of student experiences of accessibility.

WHAT SPECIFICALLY ABOUT THE SUPPORT FROM THE INSTRUCTOR HELPED YOUR LEARNING?

The following seven themes emerged as the most common ways students describe support from the instructor as beneficial for their learning:

1. **Teaching study skills and learning strategies**
2. **Demonstrating an understanding of student needs, flexibility**
3. **Offering frequent office hours, extra availability, and rapid email responsiveness**
4. **Uncovering student difficulties and providing explanations**
5. **Expressing care, wanting students to succeed, providing relevance, and increasing motivation**
6. **Giving feedback and communicating expectations**
7. **Creating a supportive environment and welcoming participation**

² Blei, David M., Andrew Y. Ng, and Michael I. Jordan. "Latent Dirichlet Allocation." *The Journal of Machine Learning Research* 3, (March 1, 2003): 993–1022.

1. TEACHING STUDY SKILLS AND LEARNING STRATEGIES

Students report feeling supported when instructors spend time helping them learn study skills or other academic success strategies.

"I've come in to get help and it helped the way I approach tests."

"Whenever I needed help understanding key terms for the class they were always there to help. Also, they provided the class with some tips for essays and how to study for the tests."

"Giving study tips and different methods to study for different classes has been beneficial for me."

"The instructor supports me when I am in need of mental or academic help."

2. DEMONSTRATING AN UNDERSTANDING OF STUDENT NEEDS, FLEXIBILITY

Students feel supported in courses where instructors demonstrate their understanding of student needs through making accommodations for barriers to student success.

"The instructor was very supportive of all students and was extremely understanding of extenuating circumstances."

"Instructor is considerate of individual student needs and situations."

"The instructor is very supportive and understanding of pandemic restrictions."

"I have quite a bit of disabilities that hold me back in my academics, but the instructor has always made feel supported."

3. OFFERING FREQUENT OFFICE HOURS, EXTRA AVAILABILITY, AND RAPID EMAIL RESPONSIVENESS

Students praised the instructor's availability, offering frequent office hours, alternative meeting times, or if the instructor was responsive to emails.

"The instructor is always available over email and during her office hours, even outside designated hours if it is needed."

"The instructor had office hours every day for one hour a day. I really appreciated that the office hours every day were at different times because it meant that there would be at least one time during the week that students could go to office hours."

"Very helpful in the class, always available to talk during office hours and over email, as well as beyond their office hours."

“Helpful at all times, willing to set up extra time for help.”

“The instructor was very quick to respond to my emails which helped me get clarification on what I needed to do.”

4. UNCOVERING STUDENT DIFFICULTIES AND PROVIDING EXPLANATIONS

Students feel supported in their learning when instructors take the time to make sure they thoroughly understand the content. This happens when instructors check for student understanding and take the time to answer questions before moving on.

“The instructor was very helpful during problem solving sessions because they made sure everyone understood the material being reviewed. During class they always took the time to answer questions and go over complicated topics.”

“They will take the time to make sure everyone understands the material before moving on.”

“The instructor takes time to explain concepts that we are specifically struggling with.”

“Was more than willing to go out of their way to make sure you understood the material.”

“Helped clarify misunderstandings and hard conceptual problems.”

5. EXPRESSING CARE, WANTING STUDENTS TO SUCCEED, ENCOURAGING, PROVIDING RELEVANCE, AND INCREASING MOTIVATION

Students describe a range of instructor practices that make them feel supported and motivated in this theme. Expressing care, encouraging students, providing relevance, and wanting students to succeed all contribute to student motivation. For example, Students describe feeling supported by instructors when they perceive instructors really care about them – both their wellbeing and their academic success.

“They were very supportive of all of us, it's definitely a breath of fresh air to have teachers that actually care about you and want you to succeed...”

“Instructor genuinely wants all students to succeed and cares about each individual student. The instructor values learning over grades and encourages students to do so as well.”

“They really cared about their students and always checked in on how we were doing with our personal lives. I really appreciated having a professor that cared about all of us and our well-being.”

Supportive instructors were also described as providing learning experiences that students understood as relevant to them

"They are a great example of the way a professor should instill career goals into their students... Their classes are serious, authentic disciplinary practices in its best form!"

"Extremely kind and helpful. Cared about students, and made you want to try harder."

"The support from the instructor made me very motivated to learn! It was not a big deal but very refreshing that the instructor cared :)"

And finally, supportive instructors were described as encouraging, enthusiastic and getting to know their students.

"The most supportive and caring professor I have yet to have. Encouraged us to persist, which allowed me to stay positive and pass the class"

"Their constant support and encouragement inspired me to do my very best, and because of this I feel like I got the most I could've gotten out of this class."

"Professor acknowledges individual student talents and highlights them to best include everyone in his class. The main goal is learning and developing our skills; more classes at UO should be taught how this instructor does."

"The instructor loves to help students and wants people to succeed in his course. They are so engaging I was never once bored in lecture. All of the materials were relevant. I wish I could take more of their classes."

"They are the most enthusiastic person I have ever met. They brought us to a new level. They cared about the material and so did we."

"Literally the best professor I have ever had. In a lecture of 200 people, they knew people's names and kept everyone engaged the whole time. If I could have this professor for every single one of my classes I would be the happiest of happy campers."

6. GIVING FEEDBACK AND COMMUNICATING EXPECTATIONS

Students associate frequent feedback with supportive instructors and appreciate clear instructor communication about expectations.

"The instructor for this course was very thorough at giving feedback and relaying information about the class to the students."

"This instructor did an excellent job at supporting all the students in terms of the course assignments and exams. Efficient feedback was always provided to students, and she made sure every student was comfortable both with the course materials, as well as inside the classroom."

"The instructor provides us with many opportunities to gain feedback and discuss the course and what we're having difficulty with in the course."

"Feedback on student presentations and clarity about the inner workings of the program"

7. CREATING A SUPPORTIVE ENVIRONMENT AND WELCOMING PARTICIPATION

Students describe supportive instructors as creating an environment in class that welcomes participation.

"I liked how they shared their opinion while creating an open environment where other people can share theirs"

"They created a good environment where you feel comfortable sharing your thoughts without feeling extensive pressure to."

"Forgiving and understanding allowed me to feel safe in the class environment."

"The instructor very supportive when it came to myself and other Native American students in the class to make sure that we felt safe to share our opinion in the class."

"Overall was a wonderful instructor. Their kindness always made everyone in our discussion feel welcome which aided in making students feel comfortable sharing their thoughts, ideas, and opinions in class discussions."

"This was a great environment that was conducive to constructive criticism!"

WHAT SPECIFIC CHANGE IN THE SUPPORT FROM THE INSTRUCTOR WOULD HELP YOUR LEARNING?

The following six themes emerged as the most common student recommendations for enhancing support from instructors:

1. **Improving instructor availability, office hours, and email responsiveness**
2. **Supportive learning environment: more willingness to answer questions and elaboration on content**
3. **Providing study materials and practice opportunities**
4. **Providing more frequent feedback and transparent grading practices**
5. **Being more understanding of student needs and using flexible policies**
6. **Openness to student feedback**

1. IMPROVING INSTRUCTOR AVAILABILITY, OFFICE HOURS, AND EMAIL RESPONSIVENESS

Students indicate wanting more availability and responsiveness from the instructor in order to support their learning. Students want more frequent office hours available at regularly scheduled times.

"It was very helpful to meet with the instructor in office hours. However, it would have been more helpful to have more office hour times throughout the week."

"I wish office hours were easier to schedule without needing to do it so far in advance. But office hours were really helpful when I did get the chance to go."

"I wish that the professor had drop-in office hours rather than scheduled appointment ones."

Students expect timely responses to emails.

"This professor is extremely unresponsive to emails. I had to send 4 emails in 5 days to try to get a response and I still didn't receive an answer."

"The instructor is almost impossible to reach by email. They never responded to a couple of my emails and never submitted an instructor approval for my AEC testing."

2. SUPPORTIVE LEARNING ENVIRONMENT: MORE WILLINGNESS TO ANSWER QUESTIONS AND ELABORATION ON CONTENT

Students describe wanting a supportive learning environment, most frequently including instructor willingness to answer student questions or provide help for students who are struggling with understanding content. For example, students want to feel like they can ask questions without judgement.

"I felt like I couldn't ask questions because it felt like the instructor either wouldn't answer the question or would be condescending and rude. Didn't feel like a good learning environment."

"The class seemed like it moved at a fast pace with no room to ask for questions. Most of the time it was hard to understand because of this."

"Sometimes I did not want to answer the instructor's questions to the class out loud, because of their way of responding to a wrong answer."

"At times I felt judged and felt dumb at times for asking specific questions."

Students perceived some instructors were indifferent to their struggles understanding class content and didn't provide the support they needed to be successful.

"The instructors seemed to be either unaware of or indifferent to the struggles students were having. They talked to us like they did not care if we actually learned the content."

"Many students fell behind this term in class and I'm not sure they realized this. It was very confusing because we never knew what we were going to be learning about..."

"Being more supportive of students who may not be grasping the content yet."

“The atmosphere created was rejecting and negative rather than welcoming. This does not help active learning and bettering student engagement.”

“I felt left behind, not supported. If I had any concerns, there either wasn't time to talk about them or they were dismissed by instructors.”

3. PROVIDING STUDY MATERIALS AND PRACTICE OPPORTUNITIES

Students want more support in how to best prepare for tests. For example, providing study guides, practice tests, review sessions, or even helping students learn how to study.

“The instructor could make use of providing more practice examples or study sessions before exams to support students better.”

“Making sure that students feel supported and that they know what they are doing because they are still learning how to do things.”

“No reviews no help for tests, I learn better when I can practice.”

“Help with study guides and notetaking.”

4. PROVIDING MORE FREQUENT FEEDBACK AND TRANSPARENT GRADING PRACTICES

Students want more feedback about assignments, more information about their grade in the course, and more transparency about grading practices. Student perspectives about supportive feedback includes a desire for more specific feedback, greater balance between positive and critical feedback, and timely feedback.

“Extremely vague feedback, almost always criticism.”

“I feel like I did not get as much feedback as I should have, especially when I was struggling in this course.”

“It took a while to get grades and feedback on writing assignments back. So much so that I am confused about what my final grade in the course will be.”

“Did not really have very much feedback to what I am doing right or wrong.”

“Positive feedback mixed in with fix recommendations would be helpful.”

“Grades were very delayed, and so it was hard to gauge how we were doing in the course until the very last minute.”

Students want to clearly understand what criteria are used for grading their assignments.

"The instructor needs to clarify how things are graded and offer better solutions than curving the class grade when their lack of grading specifics causes low grades from students."

"I received terrible grades on assignments and followed the guidelines."

"One of my group members who was doing the same quality and amount of work as us was getting awful grades for no reason. There needed to be better communication so we could understand why they were receiving different grades from the rest of us."

"More clarity on assignments, if a student meets all the requirements, they shouldn't be marked down."

"In lecture I found the instructors do not accurately convey the expectations for the assignment's requirements and they also do not provide enough examples or guidance for what is expected at project turn in. More (good/correct) examples and talking about the projects in class would be extremely helpful."

5. BEING MORE UNDERSTANDING OF STUDENT NEEDS AND USING FLEXIBLE POLICIES

Students find strict course policies, especially attendance policies, as lacking support for the different needs of students.

"I felt as though there was no room for mistakes in this course because there were such hard deadlines and strict assignment policies which made it difficult to get the best grade I could get."

"Better understanding that some of us have significant conflicts/issues outside of class that sometimes interfere with being to class on time."

"Sometimes people were sick and were not able to come to class and he didn't budge really on their points?"

"The class is very rigid, and some of the policies seem a little unfair towards students."

"I don't like the attendance policy since it affects our grade so drastically."

Students also perceive a lack of care or sensitivity about their own circumstances from instructors.

"This includes communication, organization, clarity of assignments and overall respect for student's time constraints, lives and feelings."

"There were moments that I felt the sensitivity and support in our learning was lacking. While I believe in tough instruction and having high expectations, there were times where I felt there was a lack of sensitivity for students."

6. OPENNESS TO STUDENT FEEDBACK

Student perceptions of their instructor's openness to feedback as an indicator of their support.

"Whenever we had a concern or a suggestion on how to improve the class often the instructor would brush it off instead of taking our concerns to heart about how some of the assignments were done."

"The instructor wasn't every helpful when asking questions via emails and didn't seem to care about any feedback from the students through the term."

"The instructor seemed to be annoyed with criticism."

DISCUSSION & RECOMMENDATIONS

Support from the instructor is the most-commonly commented on teaching practice by students in the SES. The overwhelming majority of comments are about how support from the instructor is the most beneficial teaching practice for their learning. This suggests either supportive instructors are very impactful for student's class experience, or students are more likely to complete the survey for more supportive instructors. Conversely, students are somewhat unlikely to select support from the instructor as the teaching practice that is most in need of improvement for their learning relative to other practices suggesting the presence of support is more salient to students than its absence. Students may also be less likely to complete surveys if they perceive their instructor is unsupportive. Openness to feedback was a common theme in student responses about instructor support needing improvement and this finding aligns with findings from student focus groups that students are more likely to complete student experience surveys if they believe the instructor cares about their feedback.

Overall, students describe supportive instructors in terms of their pedagogical choices, their policies, and their personality. Pedagogical choices like teaching study skills, uncovering student difficulties, answering questions, and providing feedback were all practices described as being supportive of student learning. Students describe supportive policies that allow for flexibility and account for the difficulties that students are facing. Finally, students interpret the way instructors express their personalities as feeling supportive, for example, instructors who demonstrate openness, enthusiasm, and positivity were perceived as supportive.

Common themes from student responses suggest a number of pedagogical recommendations for instructors seeking to help students feel more supported in their learning. The recommendations below are made in collaboration with the Teaching Engagement Program (TEP).

TEACHING STUDY SKILLS AND LEARNING STRATEGIES

Instructors can take time to discuss learning strategies and provide opportunities for student reflection and metacognition. The [student success toolkit](#) includes ready-made assignments for students to develop effective study skills and reflect on their learning.

DEMONSTRATING AN UNDERSTANDING OF STUDENT NEEDS, FLEXIBILITY

Instructors can adopt course policies that allow for flexibility and communicate those policies to students. For example, TEP provides sample course policies about [participation and attendance](#) and about using and [communicating deadlines](#). Instructors can also choose to automatically drop the lowest assignment or quiz to allow for sickness, absence, or other student conflicts while avoiding additional workload to facilitate flexibility for students.

OFFICE HOURS, EXTRA AVAILABILITY, AND EMAIL RESPONSIVENESS

Instructors can provide multiple options for out-of-class meetings with them and clarify expectations for communication and answering student inquiries. Instructors are required to provide a minimum of 2 hours/week of options for students to meet with them ([learn more here](#)) but can also indicate how to contact the instructor for an alternative meeting time. Instructors should set expectations of how and why to communicate with them during the term. For example, TEP provides sample policies and recommendations about instructor [communication and email responsiveness](#).

UNCOVERING STUDENT DIFFICULTIES AND ANSWERING QUESTIONS

Instructors may consider how they structure classes, how they interact with students during class time, and what opportunities students have for getting questions answered. The TEP student success toolkit suggests instructors 1) Build a relationship with students so they feel comfortable revealing confusion and difficulty, 2) Use positive language in your interactions with students, 3) Extend direct invitations to attend office hours, either in class or by using the "Message Students Who" function in the Canvas gradebook, and 4) Include a Class Q&A discussion board in Canvas in which students can ask questions and where instructors and students can answer.

EXPRESSES CARE, WANTS STUDENTS TO SUCCEED, ENCOURAGES, PROVIDES RELEVANCE, AND MOTIVATES

Students perceived instructors as being supportive when they expressed care, expressed a belief and desire for students to be successful, were positive and encouraging, and helped them see the relevance of the course content to their own interests. These elements align with research on student motivation³. While instructors are not in control of student motivation, they can modify these elements of courses to help positively influence student's motivation. This [TEP resource](#) elaborates on supporting students by attending to the factors that influence their motivation: establishing relevance, developing self-efficacy, building relationships, and allowing for autonomy.

PROVIDING MORE FREQUENT FEEDBACK AND TRANSPARENT GRADING PRACTICES

Instructors can use [transparent design](#), an assignment format which specifies the purpose, task, and specific evaluation criteria. The [Career Readiness Toolkit](#) highlights UO faculty examples of transparently designed assignments. Instructors can take advantage of [canvas gradebook](#) features to provide targeted feedback or explain grading decisions to groups of students, for example the "Message students who..." feature in canvas. A future practitioner guide will focus specifically on student perspectives and recommendations for feedback from the instructor.

OPENNESS TO STUDENT FEEDBACK

Students often have valuable insights about their own experiences in their courses. The midway Student Experience Survey offers instructors an opportunity to collect student feedback and make adjustments or clarify policies before the end of the term. TEP provides guidance on interpreting and using midway Student Experience Survey feedback [here](#). The important step is to communicate back to the class about the provided feedback and the instructor's choices to clarify your decisions or make an adjustment. Alternatively, some instructors use anonymous feedback surveys to collect student feedback throughout the term.

³ Ambrose, Susan A., Bridges, Michael W., DiPietro, Michele, Lovett, Marsha C., & Norman, Marie K. (2010). How learning works 7 research-based principles for smart teaching. San Francisco, CA: Jossey-Bass.

OTHER STUDENT COMMENTS ABOUT SUPPORT

Student comments about “support” are not limited to the two open-ended responses specifically linked to the selection of support as either the most positive or negative learning element. Over 3,200 additional comments include “support” as a response to other questions, most frequently praising instructors for their supportive practices in the open-ended final SES question. Students also commonly reference support in comments about beneficial feedback, attendance, and instructor communication which mirrors some of the common themes in student responses identified above.

SUPPORTING STUDENTS IN LARGE CLASSES

Students in classes of fewer than 20 students are more than twice as likely to comment that the support from the instructor was beneficial compared to classes with more than 50 students. Similarly, students in large classes are more likely to comment on support from the instructor needing improvement. However, many of the teaching practices that students describe as being supportive can be implemented in large courses. In fact, the recommendations above were all made with a range of course sizes in mind and many of the representative student comments come from large courses. Some recommendations may even be more beneficial in large classes: for example, adopting flexible course policies that allow for student absences or missing assignments can save instructors time from having to deal with each student case individually.

APPENDIX A: TOP TWENTY DISTINGUISHING WORDS IN “SUPPORT” RESPONSES*

Words that the authors thought were interesting or actionable are **bolded**.

support	supportive	office	willing	available	care	kind	succeed
respond	dr.	open	meet	offer	reach	patient	flexible
incredibly	comfortable	awesome	extra	encouraging	clarify	encourage	approachable
quick	quickly	accessible	environment	passionate	concern	tell	success
advice	positive	clearly	response	knowledgeable	responsive	ta	accommodate

**Calculated by comparing the tf-idf of words in answers to accessibility questions to those in answers to other questions. More information is available in an upcoming methods paper.*