# *What helps learning in this class?* Assessing Teaching and Learning in Predominantly Freshman Courses

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## Abstract:

A class interview is a quick and simple assessment tool to collect qualitative information on student learning experiences. At the University of California Merced, the Students Assessing Teaching and Learning (SATAL) program offers class interview assessment services for faculty. The SATAL program is within the university's Center for Research on Teaching Excellence and provides a variety of assessment, data collection, and survey services. With the goal of exploring teaching practices that could positively impact freshman learning experiences, SATAL compiled class interview results of 195 students from five entry level courses within the School of Social Sciences, Humanities and Arts (SSHA) and the School of Natural Sciences (SNS). SATAL students organized and aggregated the results from both schools to identify the top five teaching practices that students found most helpful in their entry level courses, between the academic years of 2011-2013. The results indicated the top five responses for students in SSHA were "Homework," "Peer Reviews," and "Videos with Interaction," while SNS students found "Homework," "Discussion/ Labs," and "Office Hours" most helpful. SATAL students found that these results align with principles mentioned in "Seven Principles for Good Practice in Undergraduate Education" by Chickering and Gamson.

## Introduction

The purpose of this paper is to highlight aspects that have facilitated learning for undergraduate freshmen at the University of California Merced (UC Merced). Freshmen are at the critical stage of transition from high school. The subjects of study they choose during their first year in college are crucial towards building learning skills they will use throughout their undergraduate education. Each subject of study is within a school of emphasis at UC Merced, School of

Natural Sciences, School of Engineering, and School of Social Sciences, Humanities, & Arts. The objective of this research is to find potential trends that are helped students learn in those particular schools. Although some may overlap, practices that aid student learning in one school may not necessarily be applied in another. Therefore, there are possible teaching practices for the schools of emphasis to adopt and support freshmen learning.

UC Merced is the 10th and newest campus of the University of California education system. It is the only UC campus located in California's San Joaquin Valley, and may be considered the most diverse UC campus. In the fall semester of 2012, the university had a total freshman undergraduate enrollment of 1,841 students ("Institutional Research..."). Hispanic students represented almost half (46%) of the undergraduate freshman enrollment. A large majority (65%) of freshman students enrolled were first-generation students, defined as the first from their families to attend college. Similarly, a large percentage of UC Merced students (62%) were Pell Grant recipients, full-time students who are considered relatively low-income and eligible for federal aid. These characteristics indicate that UC Merced has a minority-majority freshman student population, where minorities make up most of the student population. This unique student body stresses the importance of research on learning and teaching practices that may be implemented to foster the best outcome for UC Merced's minority-majority freshman population.

This research focuses primarily on undergraduates in their first year of university. Identifying and sharing trends that help freshman learn better, may help faculty members enhance teaching and learning in their classrooms.

During the academic years of 2011-2013 (August 2011-Spring 2013), UC Merced's Students Assessing Teaching and Learning (SATAL) program responded to class interviews requests from the School of Social Sciences Humanities and Arts (SSHA) and the School of Natural Sciences (SNS). The School of Engineering has not been included in this research since no predominantly freshman course from this school requested a class interview at the time.

*Students Assessing Teaching and Learning*

The Students Assessing Teaching and Learning (SATAL) program is a service offered by the Center for Research on Teaching Excellence department at UC Merced. This service helps faculty, TAs, and academic programs gain a better sense of the learning experience of their students in their classes and in other academic contexts. The program provides a variety of assessment services for instructional faculty that include: class interviews, mid/end-course evaluations, class observations, video tapings, and focus groups.

*School of Social Sciences, Humanities, and Arts*

The School of Social Science, Humanities, and Arts (SSHA) is committed to innovative and substantive research, excellent teaching and student-

focused learning. SSHA provides depth within a broad range of outstanding academic programs tool encourages critical thinking, lifelong learning, civic responsibility and global understanding; while offering ten majors with seventeen minor options.

*School of Natural Science*

The School of Natural Science (SNS) advances in biology, chemistry, earth sciences, mathematics and physics. The academic and research programs within the School of Natural Sciences creates an environment for excellence in student achievement and cutting-edge research in the broad areas of life, physical and environmental sciences.

## Methods

In the academic years of 2011-2013, SATAL students conducted class interviews for courses in the following manner. The interviews were done in a three-step process, known as a "think, pair, share" approach. Initially, students in the class were asked to fill out an individual survey answering the following questions:

- "What helps learning in this class?"
- "What changes could the instructor make to improve your learning?"
- "What changes would you do for your learning?"

Secondly, the students formed into groups of four to five individuals and shared each individual answer with one another. The groups were then instructed to record responses that had a high level of agreement onto a group survey, containing the same questions.

After about five minutes, students from each group shared some of their answers aloud. Each of these shared responses was then repeated to the class by a SATAL student who then polled the entire class to identify how many students agreed with that certain answer. Participants in the entire class who agreed with the statement would raise their hands and a SATAL student would record the number of students with their hands raised. Thus the results identify the most frequently agreed upon responses associated with helping students learn in that particular class.

This research selected predominantly freshman courses, defined as classes that have a simple majority (50%+) of first-year standing students, from SSHA and SNS. Using the most currently available enrollment data from the Institutional Research & Decision Support Planning at UC Merced, the following courses for the academic year of 2011-2013 had a majority of first-year standing students: Technology in Society (HIST 40), College Reading & Composition (WRI 10), The World at Home (CORE 1), Biology Today (BIO 5), and Preparatory Chemistry (CHEM 1).

From the courses identified, consensus data from class and group surveys were aggregated according to schools. Class interview results from HIST 40, WRI 10, and CORE 1 were grouped to represent SSHA, while results from BIO 5 and CHEM 1 were combined to represent SNS. A total of 195 students were included in this study, 106 from SSHA and 89 from SNS.

| *School of Emphasis* | *Courses* |
|---|---|
| *School of Social Sciences, Humanities, and Arts* | HIST 40, *Technology in Society* (n=22) |
| *N=106* | WRI 10, *College Reading & Composition* (n=15) |
| | CORE 1, *The World at Home* (n=69) |
| *School of Natural Sciences* | BIO 5, *Biology Today* (n=44) |
| *N=89* | CHEM 1, *Preparatory Chemistry* (n=45) |

Table 1: Displays total number of courses and students included in study

An analysis was performed on the collected tabulations to identify the top five most frequently occurring responses for each of the class interview questions related to helping students learn.

## School of Natural Sciences Results

The aggregated data of class interview responses from SNS courses to the first question, "What helps learning in this class?" identified the following as the top 5 most commonly expressed by students. Students identified "Homework" (72 or 81%), "Examples" (41 or 46%), "Lecture" (29 or 33%), "Discussions or lab sessions" (24 or 27%), and "Office hours with professor" (21 or 24%) as the most helpful practices for their learning.

| *"What helps learning in this class?"* | *Rate of Agreement (N=89)* |
|---|---|
| *Homework* | 72 or 81% |
| *Examples* | 41 or 46% |
| *Lecture* | 29 or 33% |
| *Discussion sections or lab sessions* | 24 or 27% |
| *Office hours with professor* | 21 or 24% |

Table 2: Displays SNS student responses to the first class interview question.

The aggregated data of class interview responses from SNS courses to the second question, "What changes could the instructor make to improve your learning?" identified the following as the top 5 most commonly expressed by students. Students most frequently recommended suggestions were: "Give reviews for exams" (69 or 78%), "Provide answers/ review homework" (43 or 48%), "Prepare lecture better [organization of slides, more examples]" (36 or 40%), "Stay focused on topic of lecture" (25 or 28%), and "Provide more interactive activities" (25 or 28%).

| *"What changes could the instructor make to improve your learning?* | *Rate of Agreement (N=89)* |
|---|---|
| *Give review for exams* | 69 or 78% |
| *Provide answers/review homework* | 43 or 48% |
| *Prepare lecture better* | 36 or 40% |
| *Stay focused on topic of lecture* | 25 or 28% |
| *Provide more interactive activities* | 25 or 28% |

Table 3: Displays SNS student responses to the second class interview question.

The aggregated data of class interview responses from SNS courses to the third question, "What changes would you do to your learning?" identified the following as the top 5 most commonly expressed by students. Students most frequently recognized behaviors were: "Attend office hours" (38 or 43%), "Study more" (34 or 38%), "Put in more effort" (25 or 28%), "Ask questions" (20 or 22%), and "Read materials before coming to lecture" (17 or 19%).

| *"What changes would you do to your learning?"* | *Rate of Agreement (N=89)* |
|---|---|
| *Attend office hours* | 38 or 43% |
| *Study more* | 34 or 38% |
| *Put in more effort* | 25 or 28% |
| *Ask questions* | 20 or 22% |
| *Read materials before coming to lecture* | 17 or 19% |

Table 4: Displays SNS student responses to the third class interview question.

## School of Social Sciences, Humanities, and Arts Results

The aggregated data of class interview responses from SSHA courses to the first question, "What helps learning in this class?" identified the following as the top 5 most commonly expressed by students. Students identified "Class Discussions" (62 or 59%), "Peer reviews for assigned essays" (40 or 38%), "Videos that promote interaction between students and instructor" (38 or 36%), "Examples" (25 or 24%), and "Group activities" (22 or 21%) as the most helpful practices for their learning. categories

| *"What helps learning in this class?"* | *Rate of Agreement (N=106)* |
|---|---|
| *Class discussions* | 62 or 59% |
| *Peer reviews for assigned essays* | 40 or 38% |
| *Videos that promote interaction between students and instructor* | 38 or 36% |
| *Examples* | 25 or 24% |
| *Group activities* | 22 or 21% |

Table 5: Displays SSHA student responses to the first class interview question.

The aggregated data of class interview responses from SSHA courses to the second question, "What changes could the instructor make to improve your learning?" identified the following as the top 5 most commonly expressed by students. Students most frequently recommended suggestions were: "Be specific in regards to reading assignments" (39 or 37%), "Post agenda/schedule ahead of lecture" (26 or 25%), "Have more discussion with the class as a whole" (25 or 24%), "Utilize discussion time better" (23 or 22%), and "Go over the lecture in discussion session to understand main points" (16 or 15%).

| *"What changes could the instructor make to improve your learning?"* | *Rate of Agreement (N=106)* |
|---|---|
| *Be specific in regards to reading assignments* | 39 or 37% |
| *Post agenda/schedule ahead of lecture* | 26 or 25% |
| *Have more discussion with the class as a whole* | 25 or 24% |
| *Utilize discussion time better* | 23 or 22% |
| *Go over lecture in discussion session to understand main points* | 16 or 15% |

Table 6: Displays SSHA student responses to the second class interview question.

The aggregated data of class interview responses from SSHA courses to the third question, "What changes would you do to your learning?" identified the following as the top 5 most commonly expressed by students. Students most frequently recognized behaviors were: "Prepare for class by reading ahead" (45 or 43%), "Complete assignments in a timely manner" (40 or 38%), "Attend office hours" (36 or 34%), "Pay attention during lecture" (29 or 28%), and "Utilize feedback more effectively" (15 or 14%).

| *"What changes would you do to your learning?* | *Rate of Agreement (N=106)* |
|---|---|
| *Prepare for class by reading ahead* | 45 or 43% |
| *Complete assignments in a timely manner* | 40 or 38% |
| *Attend office hours* | 36 or 34% |
| *Pay attention during lecture* | 29 or 28% |
| *Utilize feedback more effectively* | 15 or 14% |

Table 7: Displays SSHA student responses to the third class interview question.

These results show that what helps students learn vary according to school, whether SNS or SSHA. "Homework" and "Class discussions" were the most distinctive and frequent responses to the first class interview question "What helps learning in this class?" for SNS and SSHA, respectively. Although "Homework" and "Class discussions" are generic terms, faculty requesting class interviews knew

what these activities entailed in their own particular class. As for responses to "What changes could the instructor do to improve you learning," none of the responses stood out as statistically striking. However, the results did show a commonality amongst SNS freshman in regards to expressing more concern for homework and exams. On the contrary, SSHA student suggestions exhibited a theme more related to class organization. Results from the last interview question illustrated overlap between both schools where freshman students were aware of behaviors to improve their performance in their classes. Altogether, responses from freshman in SNS and SSHA, resemble widely accepted principles in undergraduate education.

## Discussion and Conclusion

There appears to be overlap between the freshman class interview responses and the ideas mentioned in the "Seven Principles for Good Practice in Undergraduate Education" (SPGPUE), developed by psychologists Arthur W. Chickering and Zelda F. Gamson. These principles are founded on over 50 years of research on teaching and learning. Gamson describes their seven principles as guidelines for faculty members, students, and administrators- with support from state agencies and trustees- to improve teaching and learning. Listed in the following table are the SPGPUE Chickering and Gamson created.

| Seven Principles for Good Practice in Undergraduate Education |
|---|
| *1. Encourages contact between students and faculty* |
| *2. Develops reciprocity and cooperation among students* |
| *3. Encourages active learning* |
| *4. Gives prompt feedback* |
| *5. Emphasizes time on task* |
| *6. Communicates high expectations* |
| *7. Respects diverse talents and ways of learning* |

Table 8: Displays seven principles class interview responses relate to.

SNS freshman responses to the three class interview questions showed a relation to the seven principles, directly aligning with principles 1, 3, 4, and 5. In response to "What helps learning in this class", SNS freshman mentioned "office hours with professors" as a factor to helping them learn, which matches with the principle encourages contact between students and faculty. Although the details of how office hours help freshman students learn at UC Merced are unknown, some strong reasons could be because students have an opportunity to know their professors on a personal level and they are able to receive extra attention to if they are having problems with the course (Codde 1).

As for the question "what could the instructor do to improve your learning," SNS students would like their instructors to provide feedback on homework and more interactive activities. These responses align with the principles of encourages active learning and gives prompt feedback, which in practice requires professors to provide comments on strengths and weaknesses on class assignments, and discuss results of class assignments and exams (Codde 3). With regards to the question "What changes would you do to

your learning," SNS freshman responded most frequently with "attending office hours," which refers back to the principle of encourages contact between students and faculty. In addition, "study more" and "read materials before coming to lecture" were responses that align with the principle emphasizes time on task.

Class interview responses to the three questions from SSHA freshman students matched precisely with principles 1, 2, 3, and 5. For the first question "what helps learning in this class," SSHA freshman responded with "class discussions," "peer reviews for assigned essays," and "group activities." These three activities support the principles of develops reciprocity and cooperation among students and encourages active learning. Cooperation amongst peers allows students to share their ideas and respond to those of others, which enables shaper thinking and deeper understanding (Chickering et. al 3). Similarly, in response to "what changes could the instructor make to improve your learning," SSHA students suggested "post agenda/schedule ahead of lecture" and "utilize discussion time better," which both reflect the principle of emphasizes time on task. Also, "have discussions with the class as a whole" was a response that relates to the principle of encourages active learning. Lastly, for the question "what changes would you do to your learning," the two most frequent responses obtained from SSHA freshman were "prepare for class by reading ahead" and "complete assignments in a timely manner." These two responses align with the principle of emphasizes time on task. Another response, "attend office hours," refers to the principle of encourages contact between students and faculty. Therefore, it appears that freshman students at UC Merced are aware of behaviors to improve their performance in their courses across schools.

Although the responses from SNS and SSHA freshmen did not explicitly mention the principles of communicates high expectations and respects diverse talents and ways of learning, it cannot be assumed instructors are not applying these principles in their teaching practices. Future research may expand to collecting class interview responses from the School of Engineering and a diverse pool of courses from each school of emphasis.

UC Merced has a minority-majority freshman student population, which may lead to requiring unique teaching practices. This study identifies what practices freshmen at UC Merced are finding to be helpful towards their learning. The results vary depending on which school of emphasis entry-level courses are in. It was shown that there existed a strong correlation between student response in the class interviews conducted by SATAL students and the "Seven Principles for Good Practice in Undergraduate Education," especially the first five principles. This indicates that supplemental research to the established seven principles such as "Applying the Seven Principles for Good Practice in Undergraduate Education" may be utilized to explore teaching practices that will enhance freshman learning at UC Merced. The results of this research idicate that freshmen responses to class interviews

align with the SPGPUE. Supplemental to the SPGPUE, is Dr. Joseph R. Codde's "Applying the Seven Principles for Good Practice in Undergraduate Education. Therefore, faculty may use Codde's research as a helpful resource for teaching predominantly freshman students in SSHA and SNS at UC Merced.

## References

Chickering, A.W., and Gamson, Z.F. (1997). Seven Principles for Good Practice in Undergraduate Education. Washington Center News.

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Eric is pursuing dual degrees of B.A Economics and B.S. Business Economics & Management at the University of California, Merced. Paired with his degrees is a concentration in finance and accounting. He continues to apply his leadership skills and academic knowledge to create positive impacts in his community.