

A Qualitative Analysis of Institutional Inequities During COVID

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Abstract— This research paper describes a qualitative analysis of open-ended responses to a survey administered during COVID-19. In April of 2020, at the beginning of the pandemic, an anonymous survey was administered in the engineering colleges at California State University, Los Angeles (Cal State LA) and California Polytechnic State University, San Luis Obispo (Cal Poly, SLO), both part of the California State University (CSU) system. The survey collected quantitative and qualitative responses to track student, staff, and faculty wellbeing. A previous paper examined the quantitative responses of students [1] and found profound differences between the two schools. This paper will use qualitative methods to look more deeply at the responses to the two open-ended questions.

The two schools have very different contexts; one is urban and primarily Hispanic, while the other is rural, primarily white, and selective in admissions. Qualitative analysis with inductive coding was used to develop themes and insights from the data. The analysis was conducted through a lens of structural inequities and power. The contrasting demographics and contexts of each university illustrates the systems that emphasize equality instead of equity. Both the individual situations of the people in the system and the structural support systems produce much different outcomes. These can be seen in the narrative responses. In addition to the contrasts related to race and economic resources, the systems of privilege and power are also clear in the narratives. Staff and students had a different experience than faculty.

We also experimented with generative AI (ChatGPT-4) to develop themes in the data. A short discussion on the usefulness and potential negative impact of this new technology will be briefly explored.

It is our hope that understanding the impact of the themes during the COVID-19 pandemic on the survey of participants and the characteristics of each university can inform more effective interventions and support measures for educational institutions to consider the unique needs of a diverse campus. In addition, we argue that it will be important to consider equity in all interventions.

Keywords—*Institutional, Equity, COVID, Qualitative Analysis*

I. INTRODUCTION: SETTING THE STAGE

In March of 2020, the globe was hit with the onset of COVID-19. The impact was felt in every country, every institution, and every individual. Higher education had to pivot quickly to remote work, which was a huge disruption for the institutions of higher education that are notoriously slow to change. The impact on the students, staff, and faculty was

profound. All of us experienced this moment where there were so many unknowns, and the anxiety was sky high. In April of 2020, when we administered this survey, no one knew if we could get COVID-19 through surface contact, there were not enough masks for all to use, tests were hard to get, and results took weeks, and we all hoped this nightmare would only last a few months. Given the need to switch to remote instruction, many universities decided to extend Spring Break to allow faculty to prepare materials and learn technology. There was much uncertainty among faculty about how to teach with Zoom and the need to rely on Learning Management Systems (LMS) that many had never used before. Students were worried about grades and content coverage. Staff were confused about working from home as so much of their time was previously spent in face-to-face problem solving for the students, faculty, and administrators. In addition, we all had to set up work from home spaces and attend to children who were no longer in school or daycare. The world was chaotic. It is within this context that we developed a survey to both gauge well-being and search for interventions to ease this mammoth disruption.

II. THE TWO UNIVERSITIES

The two universities are within the California State University (CSU) system, the largest public higher education system in the United States, with 23 campuses that stretch over 800 miles of California. Funding for both campuses is through the State of California General Fund at a system-wide average of 58%. The remaining funding comes from tuition and campus-based fees [2]. Although the two universities in this study are in the same university system, they are quite different. California State University, Los Angeles (Cal State LA) is a federally designated Hispanic Serving Institution (HSI) while California Polytechnic State University, San Luis Obispo (Cal Poly, SLO) is not. Cal State LA is an urban campus with mostly commuters, while Cal Poly, SLO is a rural campus with mostly residential students. Cal State LA serves the urban area of Los Angeles, while Cal Poly, SLO serves the entire state as a Polytechnic. The details of the differences in demographics and admissions can be seen in Table 1.

TABLE 1: COMPARATIVE DATA FOR THE TWO UNIVERSITIES [3], [4]

Fall 2023 data for engineering related colleges except as indicate by *	Cal State LA	Cal Poly, SLO
Total university enrollment *	24,673	22,279
Enrollment in engineering colleges	3180	6275
Percent Hispanic	69%	23%
Percent White	4%	41%
Percent women or non-binary	17%	27%
Percent first generation	54%	17%
Cost of attendance in engineering – Tuition and mandatory fees	\$6,814	\$12,204
Acceptance rate	91%	21%
Percent Transfer students	6%	3%
Faculty (Student faculty ratio)	81 (39:1)	267 (23:1)
Academic terms*	Semester	Quarter
Location*	Urban	Rural

The differences in the two universities can be seen in the students and the resources. Cal State LA has more Hispanic and more first-generation students. Cal Poly, SLO has more resources, indicated by the cost of attendance. In the CSU, the Polytechnics (there are 3 of the 23) can charge more to students in tuition, but Cal Poly, SLO also has added campus-based fees throughout the last 20 years that provide many more resources and support for the students. This year alone, it will provide an extra \$34 million. This imbalance also shows up in the important student-faculty ratio metric.

III. THEORETICAL FOUNDATIONS

A. Resilience

The initial survey was created by Tona Rodrigues and Elizabeth Thompson (second author on this paper) at Cal State LA [1]. The survey was grounded in theories of resilience both personal and social, and resilience after natural disasters. We used the model from Choularton, et al [5], where they define the types of events as shocks and stressors. The shocks are often acute, like a natural disaster, or the onset of a global pandemic, and stressors are ongoing situations like poverty or the continued mental stress from unknown dangers. In research on resilience in natural disasters, the ability of a system to withstand the initial shock is termed “robustness” while the ability to recover and rebuild is referred to as “rapidity” [6]. In this paper, we are interested in people’s ability to withstand the initial shift to remote work and the ongoing ability to handle the pandemic, as it progressed into an uncertain future. The two populations we examined have very different situations related to resiliency. They are different in financial well-being (as can be seen in the comparison above), infrastructure (which the urban or rural locations include commuting and access to the internet), human and cultural factors (which includes food

insecurity, and family support), social networks, and individual mental health [7],[8].

B. Equity and Equality

Although the two universities are within the same system, the needs and resources are not the same. In an equality framework, we would expect that each campus and individual is treated equally, with the same per capita spending on facilities, support systems, human resources and financial aid. Within an equity framework, the allocations would be based on the needs of the individuals. In some models, this would mean that those who have identities that have been historically oppressed would have more resources, while those with generational advantages would have less. When comparing Cal Poly, SLO and Cal State LA we can see that not only are they not equitable, but they are not equal either. In fact, the resources contributed to the two schools will guarantee that Cal Poly, SLO has better outcomes from the COVID-19 disruptions.

C. Qualitative Analysis

This paper examines the answers to open ended questions from the survey. We used qualitative analysis to gain deep insights. Qualitative analysis is a fundamental approach used in various fields to help researchers understand and interpret non-numerical data. It focuses on exploring the depth and richness of data in texts, images, interviews, and observations, and is a valuable tool for exploring complex phenomena, understanding social contexts, and gaining insights into the meaning individuals attribute to their experiences. Using qualitative analysis starts by asking open-ended questions. It is commonly used in disciplines like sociology, psychology, anthropology, education, and business studies [9].

There are eight key aspects of using qualitative analysis [9] and not all aspects of qualitative analysis are used at once since it is dependent on the questions asked and information received from participants. For this paper’s purposes, we will discuss the key aspects we used when analyzing data gathered with this survey instrument. Data collection methods in qualitative analysis can be open ended questions in surveys, interviews, observations, focus groups, or documents and texts. Following the collection of data, the data is coded and categorized, where the analyzed qualitative data identifies patterns, themes and categories. Coding involves assigning labels/codes to segments of data for organizational purposes.

We used thematic analysis (manual coding of the comments from two questions) in which the researcher identifies and analyzes the recurring themes or patterns within the data and once the themes are established, it assists the researcher in making sense of underlying/hidden meanings and experiences expressed by the participants [10]. We also used Grounded Theory which has the researcher develop theories or explanations based on the data instead of starting with pre-existing theories [11]. It was important to use an iterative process that involves constant comparison and refinement of the emerging concepts. We considered both Reliability and Validity. Reliability ensures the accuracy and rigor of the qualitative findings, and validity is established through techniques like member checking, peer debriefing, and

triangulation. The last key component of qualitative analysis is the use of qualitative software in which researchers use software to assist in organizing and analyzing large sets of qualitative data. We use Excel to help organize and sort the narratives.

IV. METHODOLOGY

The initial survey was administered with an email invite to an online survey in Qualtrics on April 15, 2020, at Cal State LA and April 21st at Cal Poly, SLO. The difference in timing was due to the IRB approval at Cal Poly, SLO taking a bit longer than at Cal State LA. The results are analyzed separately for students, staff, and faculty at each campus. The results are compared for salient differences between groups. Specifically, we looked at the cross-campus comparison for like groups (staff, faculty and students) and the internal differences for groups within each university.

The survey was subsequently administered multiple times over the spring, summer, and fall of 2020. For this analysis we only examined the first administration of the surveys.

Table 2 below includes the number of people who responded to open-ended questions in the survey and the number of comments analyzed. People who responded to the surveys sometimes wrote about many topics in the text box provided. When we analyzed these responses, we counted each sentence as a unique comment.

TABLE 2 - NUMBER OF RESPONSES/NUMBER OF UNIQUE COMMENTS

	Staff	Students	Faculty
Cal State LA	4/13	193/602	8/26
Cal Poly, SLO	18/34	221/744	28/156

A. Analyzing the data using traditional coding methods

The data was downloaded from Qualtrics into Excel. Below is the wording of the two open ended questions (see Figure 1)

1. What additional help can the College of Engineering or [university name] provide to you during this time?
2. Is there anything either negative or positive about the stay-at-home situation that you would like to share with us?

Fig. 1. Open ended questions in the survey

As a first step, we read over the comments from two open-ended questions from faculty, staff, and students at both campuses and began to establish significant themes. Next, as described above, we divided up the responses into separate sentences. This had the effect of counting responses from people who wrote about many topics more heavily than those who had short responses. This also allowed us to categorize responses into multiple themes [12], [13], [14]. We started with faculty and staff from both Cal State LA and Cal Poly, SLO. We then read through the comments for students at both campuses. This was done iteratively by both authors until we came to consensus on themes and sub-themes.

V. RESULTS

The following themes emerged. Also listed are the subthemes which provide a more detailed explanations. Students' themes (Table 4) were different from faculty and staff (Table 3).

TABLE 3 – THEMES AND DESCRIPTIONS FOR FACULTY AND STAFF AT BOTH CAMPUSES

Themes	Subthemes
Technology	<ul style="list-style-type: none"> • Access to equipment and internet • Cost of in-home office • Use of Zoom and LMS (faculty)
Communication	<ul style="list-style-type: none"> • Lack of communication from college and university • Frequent, complex, and changing communication • Lack of planning for next year
Mental Health	<ul style="list-style-type: none"> • Concern for others • Stress related to workload preparation for online teaching (faculty) • Social isolation • Stress due to family
Work Conditions	<ul style="list-style-type: none"> • Balance family and work • Preparation and execution for online teaching (faculty) • Job security • Distrust from supervisors (staff)
Instruction (faculty)	<ul style="list-style-type: none"> • Concern for student engagement and learning. • Miss interacting with students • Concern for student's access to technology
Positive	<ul style="list-style-type: none"> • More time with family • No commuting • Respect for the institution's efforts • Enjoy access to home

TABLE 4 – THEMES AND DESCRIPTIONS FOR STUDENTS AT BOTH CAMPUSES

Themes	Subthemes
Resource	<ul style="list-style-type: none"> • Lack of access to students support services (tutoring, registration, etc.) • Lack of access to computing facilities, software, and equipment, • Lack of access to technology (computers and internet) • Access to a place to study
Communications	<ul style="list-style-type: none"> • Communications about status of the transformation to online • Communication about fall planning
Mental Health	<ul style="list-style-type: none"> • Loss of social interaction • Living conditions • Health resources • Stress from online courses
Finances	<ul style="list-style-type: none"> • Concerns regarding tuition fees and availability of services • Job loss • Ineligible for government stimulus • Family finances
Instruction (related to faculty)	<ul style="list-style-type: none"> • Learning Management Systems (LMS), • Missing hands-on lab experience, • low engagement, focus, and motivation. • Distraction from family and home • Impact on academic performance • Workload from faculty

	<ul style="list-style-type: none"> • Lack of flexibility • Dissatisfaction with the quality of online courses
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There is a lot to be said about the impact of COVID-19 on everyone; however, we will be examining the results from this study through an equity lens. By examining the frequency of comments in the themes and subthemes, we identified several important equity-related issues. These are discussed below with salient quotes.

A. Staff at Cal State LA had more issue with technology than staff at Cal Poly, SLO

Although the number of responses from staff were quite low compared to the students, the total number of staff in each college is also low. We estimate about 50% response rate, so we feel these result do indicate the differences between the two universities. For Cal State LA 33% of the responses were related to difficulties with technology, while Cal Poly, SLO only had 9% of the responses related to technology. Below is a representative comment.

“Prior to this stay-at-home situation, I did not have internet installed at home, because I did not need it and it was an extra expense.” – Cal State LA staff

B. Faculty at Cal State LA had more positive comments than faculty at Cal Poly, SLO

Although the number of responses was somewhat lower for faculty, the differences in the positive comments were significant. Faculty at Cal State LA chose to write 38% of their comments as positive, while faculty at Cal Poly, SLO included 13% positive comments. Below are a couple of these comments.

“We are all doing the best we can, and the university has shown great support.” – Cal State LA faculty

“Not having to drive saves time, which can be used for additional work and resting.” – Cal State LA faculty

“Staying closer and spending more time with family has been positive”. – Cal State LA faculty

“I’m surprised at how well/successful virtual events (department meetings, open house activities, club meetings) have gone.” – Cal Poly, SLO faculty

“I have been so pleasantly surprised by how well Zoom is working, the engagement of students during Zoom lectures/activities, and the positive feedback from students.” – Cal Poly, SLO faculty

C. Faculty at Cal Poly, SLO had more coments about workload than faculty at Cal State LA

Faculty at Cal Poly, SLO reported 26% of their comments related to concerns about workload. This compares to 12% of the comments by faculty at Cal State LA that showed concern about workload. Below are a couple of these comments.

“I know lecturers at Cal Poly, SLO who have relatively poor job security and have several preps and are really struggling, I think partly because they feel pressure to do a good job.” – Cal Poly, SLO faculty

“The additional load of everything ‘virtual’ along with managing the kids at home on top of this has increased my work load compared to before.” – Cal Poly, SLO faculty

“I’m not getting anything done with my child around. I’ve just accepted that.” – Cal State LA faculty

“The students, however, seem to think I’m available 100% of the time and it is frustrating.” – Cal State LA faculty

D. Students comments showed a similar distribution for each school

The distribution of comments from students at each university was consistent. A little over 50% of comments were related to the negative instructional impact from switching to online. Fifteen percent indicated mental health challenges at each school. About 12% had positive comments, and 10% were concerned about finances. However, when the comments related to instruction were further analyzed, some striking differences were visible. These are listed in the next three equity-related issues.

E. Students at Cal Poly, SLO had more comments about extra workload from faculty than students at Cal State LA

Students at Cal Poly, SLO submitted more comments on the excessive workload faculty were assigning. Eleven percent of the comments were related to this. One reason for this may have been that Cal Poly, SLO is on a quarter system, and the Spring quarter was shortened by one week, from 10 to 9 weeks. This caused the coverage of topics to be condensed which caused a great deal of stress for students who were adjusting to online and at-home learning. Below are several comments illustrating these concerns.

“Some professors have added an excess of homework to substitute for the inevitable inefficiencies that come with remote instruction, which has been a little frustrating.” – Cal Poly, SLO student

“A couple of my professors are lecturing longer than the normal class time which is annoying and it is cutting into time for my other classes.” – Cal Poly, SLO student

“The teachers seem to think that we can spend more time on their classes because there is nothing else to do but in these first two weeks I have put in about 60 hour weeks which is high for the courses I am taking.” – Cal Poly, SLO student

“In addition my teachers are cramming 10 weeks of material into 9 weeks.” – Cal Poly, SLO student

Students at Cal State LA also indicated these was heavy workload, but only 4% of the comments pointed to this issue.

F. Students at Cal State LA had more comments about home and family situation that made studying and attending classes difficult than students at Cal Poly, SLO

Nearly 10% of comments from students at Cal State LA indicated stress from lack of space and quiet environments for studying, while less than 2% of the comments from Cal Poly, SLO students indicated this concern. Below are some comments from Cal State LA

"I just really hate doing school in my home, my eyes hurt and my family just makes things challenging when I do class and homework." – Cal State LA student

"I study at the dinner table, and when the family wants to eat, i (sic) must move my stuff and stop what I'm doing." – Cal State LA student

"Something negative would be that I can easily get distracted especially if I am home, therefore, it take (sic) me a really long to finish my work and it's also bad for when I have to take a test or quiz for me." – Cal State LA student

"For example, i (sic) now have to spend a lot of time helping my siblings complete their online classes because my parents can't so it takes away from it." – Cal State LA student

"My children's school is also closed and my wife works so I'm homeschooling my children one of whom is in a Mandarin immersion program so it is like teaching 3 children when I only have 2." – Cal State LA student

G. Students at Cal State LA had more comments related to lack of flexibility from faculty than students at Cal Poly, SLO

Eight percent of comments from students at Cal State LA requested that faculty be more lenient with assignments and attendance. This is contrasted with 3% of students at Cal Poly, SLO feeling faculty could be more flexible in class. Below are some comments from both universities. These comments are very similar, but more prevalent at Cal State LA.

"Remind professors to be lenient and empathetic to students as not everyone is on the same playing field now considering the pandemic." – Cal State LA student

"Help with extensions to due dates and more flexibility in turning in assignments, and being considerate of the different situations each student face." – Cal State LA student

"I want to say adding flexible dates and deadlines may be essential as typically difficult and or stressful life events such as moving and finding a new place to live is becoming

increasingly difficult and more stressful." – Cal Poly, SLO student

"I have timed quizzes almost every single day, but I don't have a quiet place to take them and it's negatively impacting my performance." – Cal Poly, SLO student

"Please continue to remind instructors that this is a difficult time for all of us; some professors have not been as flexible or receptive to feedback, so that makes things more stressful in an already stressful time." – Cal Poly, SLO student

VI. DISCUSSION

It is difficult to make generalizations from this data and even more difficult to hypothesize why these differences are occurring. We do know that the two universities have different levels of resources and different student bodies. Therefore, it is not too much of a stretch to suggest that these two factors may be causing the differences that are showing up in the data.

In the hierarchy of academia, staff are often the least likely to be allocated resources necessary to do their work, and this is amplified by the differences in the resources available at the two universities. Staff at Cal State LA did not have the technological support needed due to both the power differentials and the resource inequities.

The results from the analysis of faculty comments are quite interesting. Although hard to determine, it looks like faculty at Cal Poly, SLO are more entitled when examining the differences we saw in the comments. The first difference is that Cal State LA faculty were more appreciative of the efforts and the difficulty of the pandemic situation given their higher number of positive comments. Conversely, the faculty at Cal Poly, SLO had a lot of negative comments about their increased workload. Of course, all faculty in the CSU and academia as a whole had increased workloads, but faculty at Cal Poly, SLO were more apt to point this out.

Students at both universities had difficulty with instruction in the transition to online. However, after digging a little deeper into their experiences, we see students at Cal State LA were confronted with faculty who were inflexible in issues of grading and attendance, while students at Cal Poly, SLO saw faculty increase workload to compensate for adjustments in schedules and inefficiency of online teaching. Both these responses caused great stress for students.

Lastly, the students at Cal State LA reported difficulty in finding suitable environments for studying since the university facilities were no longer available. We hypothesize this is due to the lower socio-economic status of students at Cal State LA. We saw this throughout the pandemic that those from more privileged backgrounds fared well, while those who were essential workers in groceries or other services had a more difficult time.

VII. USE OF CHAT GPT

After we went through the manual qualitative analysis of sorting and categorizing the data into themes and sub-themes

(See Tables 3 and 4), we then decided to use an AI generator, ChatGPT-4. We asked ChatGPT-4, “List the top five themes from this data” for each of the three groups, faculty, staff, and students, at Cal State LA and Cal Poly, SLO and to look at how AI would decide the themes and sub-themes.

Using an AI generator like ChatGPT-4 can have a positive impact on qualitative analysis because it saves time and can be more efficient than using manual manipulation. Manual data manipulation is arduous and extremely time-consuming. We spent hours and hours going through each dataset, counting how many data points were in each theme and sub-theme for faculty, staff, and students at both universities. Using ChatGPT-4 took literally seconds to come up with nearly the same themes as we did manually. ChatGPT also organized the data points easily and concisely. For all the efficiency and time saved, there are negative sides to using an AI generator. AI generators are built by humans, and all humans have inherent biases whether the developer recognizes them or not. Therefore, the AI generator will have some of those biases in the output. Of course, we also have biases in the manual process, but it is harder to remember that this AI software is not objective. ChatGPT-4 is not in real-time, it is only up-to-date through 2022. There are also privacy issues using an AI generator especially with classified data that can be misused. Finally, Generative AI uses a lot of computing resources which could have a significant environmental impact.

Table 5 and 6 illustrates of the themes and subthemes that ChatGPT-4 found for students at the two universities. The differences delineated are reflected in the results and discussion above. For us, this validates a potential collaboration with Chat GPT in qualitative research.

TABLE 5 – CHATGPT4 GENERATED THEMES AND SUBTHEMES FOR STUDENTS AT CAL STATE LA

Themes	Sub-themes
Challenges w/ Remote Learning	<ul style="list-style-type: none"> • Technical issues (Inadequate internet connectivity, hardware, and software) • Transition to online education • Lack of structured environment of physical classrooms
Mental Health and Well-being	<ul style="list-style-type: none"> • Increased anxiety, stress, and feelings of isolation • Requesting more support for counseling services • Greater understanding from faculty regarding mental health challenges
Need for flexibility and Support from Faculty	<ul style="list-style-type: none"> • Greater flexibility in deadlines, grading, and attendance policies • Varied and often challenging home environments • A call for faculty to adapt their teaching methods
Financial Concerns and Tuition Readjustment	<ul style="list-style-type: none"> • Perceived reduction in the value of education (online delivery) • Advocating for reducing tuition fees or refunds • Concerns about financial stability

Improvements in Online Instruction and Resources	<ul style="list-style-type: none"> • Requesting better quality online instruction • More interactive and practical learning tools and improved access to software and technical resources • Enhanced training for faculty to effectively use online platforms • Increased access to online tutoring, enhanced library services, and technological support to facilitate effective remote learning
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TABLE 6 – CHATGPT4 GENERATED THEMES AND SUBTHEMES FOR STUDENTS AT CAL POLY SLO

Themes	Sub-themes
Access to Resources and Support	<ul style="list-style-type: none"> • Need for reliable internet, availability of library and study spaces • Access to various resources – career and health services • Access to software
Challenges with Online Learning	<ul style="list-style-type: none"> • Difficulties with online classes and workload management • Lack of effective communication and organization from instructors • Need for recorded lectures and standardized online platforms
Mental Health and Well-being	<ul style="list-style-type: none"> • Negative impact of home environment on productivity and motivation • Need for mental health support and counseling • Increased anxiety, depression, and lack of sleep
Financial Concerns	<ul style="list-style-type: none"> • Requests for tuition reductions and refunds for unused campus facilities • Need for financial assistance and guidance due to job losses and lack of summer internships • Challenges with affording textbooks and other academic materials
Communication and Flexibility	<ul style="list-style-type: none"> • Need for regular updates on timelines and future plans (Fall quarter) • Better communication from instructors and the university • Emphasis on the importance of clear and consistent communication channels

VIII. CONCLUSION

It is our hope this study illuminates the inequities that stem from a university system that is inequitable in the allocation of resources. Those who are in most need of support are getting a lower amount of support while those who already are privileged in our system are getting more resources. The rich are getting richer. We can see this in the contrast between the schools, and the results of this quantitative analysis show the heartbreaking impact on individuals in the system.

We believe it is important to contrast and compare these universities in order to see and do the difficult and important work of equity, access, and reparations.

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