

Let Me LAE-Something On You or: How I Found My Way Back to Education Through LAES

Introduction

The idea of career exploration is not a foreign concept on many college campuses, but Cal Poly, San Luis Obispo harbors a program that puts the decision-making processes in the hands of students first and foremost. Liberal Arts and Engineering Studies (LAES) prepares students for the high-stress, collaborative, and ever-changing professional landscape by giving opportunities to find out exactly what they want to do.

Students are not always simply left-brain or right-brain, but often an eclectic mixture of both with a number of talents in both areas. This kind of cross-disciplinary thinking is vital to a healthy academic environment, and LAES' real-world, project-focused curriculum is exactly what is needed. (Bill Trammel, LAES Alumni 2009)¹

Students make their way to the major from various departments across campus, most notably from within the College of Engineering (CENG), since it shares a supermajority of classes with the various engineering disciplines. Any student switching into the major before the end of their second year is primed for the maximum benefits that the program offers. The LAES faculty are extremely adept at discerning the right path for a particular student, making the major the most individualized experience on any college campus.

¹ "About Us." - *Liberal Arts and Engineering Studies Program*. Web. 24 May 2016.
<http://laes.calpoly.edu/content/about>

This program is a wonderful way to harness the energy and imagination of gifted students (and faculty) who find themselves drawn not to one discipline, but to a bridging of disciplines. (Dr. W. Terrence Spiller, Chair, Music)²

The above statement perfectly reflects the essence of the major. There is not just one way to go with your major and if anything, LAES allows more realistic exploration of what jobs are actually feasible after graduation and furthermore allows the student to take the exact classes that could and would secure a job in a highly specific field of their interest. Students in this major are highly motivated risk-takers, unsatisfied with following a prescribed path, wishing to blaze their own trails.

The two campuswide mantras to live by are *Learn by Doing* and *The Mustang Way (Pride. Responsibility. Character)* and as an advocate for those sayings and what they stand for, I see so much of it ingrained in the DNA of this major. *Learn by Doing* points to the academic message our campus strives for, with a focus on project-based learning, collaborative problem-solving, and a very unique form of knowledge acquisition. On the other hand, *The Mustang Way* builds up the personal side of our student body, where we can take **pride** in our accomplishments, **responsibility** for both present and future actions (personal and professional), and **character** in all we do, knowing that we represent not only ourselves but this esteemed educational institution that has afforded us nearly limitless opportunities for growth and the like.

² "About Us." - *Liberal Arts and Engineering Studies Program*. Web. 24 May 2016.
<http://laes.calpoly.edu/content/about>

The successful graduate will fully understand how technology can be both a solution and a problem when dealing with a wide range of issues, and can revise and adapt complex information for public distribution through a wide range of textual, visual and interactive media.³

Liberal Arts and Engineering Studies is an aberrant collegiate experience, putting the responsibility in the hands of the student, making the experience that much more personal. Being such a departure from the norm, programs like Cal Poly's are few and far between but have proven to work well for their intended purpose. Integrating two schools of thought that many take to be incompatible is the best opportunity for our students to become skilled, contributing members of their global society, ensuring success for future generations in every way imaginable.

The successful graduate will understand technology and its limitations, benefits, and implications relative to other fields. Graduates receive a solid foundation in engineering and scientific principles as well as a cultural appreciation that supports them in careers requiring significant levels of technical and cultural fluency.⁴

We live in a world that is growing at an exponential rate in its cultural diversity and likewise in its job diversity. The number of professions that require a singular set of skills are dwindling as they now require an amalgamation of skills from a variety of disciplines. Personally, my profession of choice is that of an elementary school teacher, but not in the traditional sense.

³ "Career Possibilities." - *Liberal Arts and Engineering Studies Program*. Web. 24 May 2016. <http://laes.calpoly.edu/content/careers>

⁴ "Career Possibilities." - *Liberal Arts and Engineering Studies Program*. Web. 24 May 2016. <http://laes.calpoly.edu/content/careers>

Personal Anecdote

What follows is but one story of the power of this LAES major and how it can enlighten your college experience and future, giving you all the tools you need, both academic and personal, both in and out of class, to be immensely successful post-graduation.

When I started my journey on the Mustang Way in September of 2012, I was solely focused on gaining any and all knowledge I could in the vast discipline of mechanical engineering. I was primarily focused on gaining the technical skills necessary for a career in the automotive industry. I was exceptionally intrigued with companies like Porsche and Tesla, who I still regard as two of the foremost companies in their fields of driving dynamics and alternative energy, respectively. However, by the end of my first year I was already burning out, needing something else. I decided that my previous experience and interest in working with school-age youth would be well-supported by exploring child development. Though unconventional, I began a minor in Child Development, hoping to become more aware of how children grow cognitively, in specific, and how I could apply these technical skills I was gaining from mechanical engineering in a meaningful way. However, the following quarter, I had my first experience with academic failure. I still cannot completely attribute it to any single factor, personal or circumstantial, but it was an eye-opening experience, testing my faith in my own potential.

It also caused me to reconsider and delve deeper into what I was actually trying to accomplish post-graduation. I was beginning to see that I was becoming further disconnected from all the things that made doing work personally fulfilling for me. The deeper I got into calculations,

the further I got from the people these processes and products would actually be benefited. I would not be able to see how people respond, the emotions that a well-designed product brings, or many other things that connect an individual to work they create. I didn't know how, but I knew I needed to make a change and a rather large one at that.

*Since I've joined LAES I've learned so much. The program has allowed me to unlock potential in myself that I had never even realized I had. (Brigit Hawley, LAES Alumni 2012)*⁵

On a trip to Apple headquarters in Cupertino, California with Cal Poly's Multicultural Engineering Program, I had the opportunity to hear from many of that program's alumni that had been hired by the company. Their stories were inspirational, but overwhelmingly validated many of the aforementioned fears I was having about the potential connectedness of the work I would be doing in many applications of a mechanical engineering degree. However, on that trip, someone mentioned Liberal Arts and Engineering Studies and even though they could not explain it very thoroughly, I was intrigued at the idea of a major that sounded so freeing. As soon as we arrived back in San Luis Obispo, I started to do all the necessary research on the major and began thinking about how, after nearly two years in an intense engineering program, I could drastically shift that trajectory and take this chance on a major that almost didn't make sense logically. Why would you mix liberal arts and engineering? But I had to take a step back and recognize for an entire year already, I was doing just that and getting tons of raised eyebrows, questions about whether I was looking to "engineer children", and how child

⁵ "About Us." - *Liberal Arts and Engineering Studies Program*. Web. 24 May 2016.
<http://laes.calpoly.edu/content/about>

development could be at all connected to mechanical engineering. I never had an answer for those naysayers, at least not until I went all-in on LAES. It was the biggest academic risk I've ever taken, no longer being able to receive a Bachelor of Science in a nationally accredited program. However, relinquishing that perceived safety that accompanies Cal Poly's clout in engineering made for a more connected curricular decision-making process.

It was up to me to figure out what I wanted to do and to take the classes that would fulfill that goal rather than following a prescribed path, no longer homogenizing my experience with that of hundreds of other mechanical engineering students. What LAES provided was a glimpse at what the real world is going to be like. From my first class in LAES 301, I was absolutely astounded at the diversity of the projects we would be undertaking. Namely, an opportunity to work with an Australian performing orchestra that integrates technology and a connectedness to the crowd in each of their performances. I was able to see firsthand that real-world applications will never fall into just one category, needing more than just a single discipline or set of skills. As I progressed through the major that third year, I settled in on what I thought was a preferable career choice. By combining industrial engineering and the humanities, specifically media production, I planned on valiantly returning to my hometown of Culver City, California, which is re-emerging as a hub for videography. The opportunity to couple industrial know-how with technical skill and leadership skill perfectly combined all of the things I've ever been interested in. However, upon further introspection, I decided that the path I needed to take was in education. I've always felt at home in the classroom, able to express myself freely both academically and socially. I wanted to give those same opportunities to the

next generation of kids, while still apply much of the technical background I received in various engineering disciplines.

Now, just weeks from graduation, I take pride in the unpredictability of my path, knowing that it has taught me innumerable lessons about how I learn and grow in an academic sense, but more importantly on a fundamentally personal level. That latter area of growth is what I feel is most imperative to being an effective teacher, with the engineering helping to develop certain thought processes and practices that are conducive to fostering efficiency. However, being such a late switch into this program, not taking the traditional Liberal Studies route, I feel that I need help from those that have had a more traditional experience. I want to know what the common challenges are when embarking on this journey and the ways in which current credential candidates and teachers nationwide are dealing with these issues.

Planned Deliverable

My planned deliverable is an accompanying document that is a compilation of and then synthesis of the most common challenges that students and teachers face in the classroom. Utilizing a group of soon-to-be credentialed teachers, I want to investigate their perceptions of a group of topics that I highlighted in my EDUC 300 class in Winter Quarter 2016. Perceived implications of student's socio-economics, effects of the school environment, and challenges of curriculum implementation were three topics we highlighted as those that most affected students, but were also most able to be addressed by teachers. After two separate activities, I will provide each member of the group with an individualized recommendation surrounding their responses and

results. Once all of that information is compiled, I will gather it into a cohesive document that outlines the most common responses, my most common recommendations, and conclusions I can draw from that information.

Literature and Technology Review

German poet and philosopher Johann W. Von Goethe says “treat people as if they were what they ought to be and you help them to become what they are capable of being”⁶ and that could not be a clearer representation of the role of a teacher in the life of a student. Knowledge acquisition plays a large yet incomplete role in the development of an individual’s education. A highly competitive, standards-based, assessment-driven education model can never truly serve the needs of students and society is in need of a paradigm shift. To ensure the future success of our country in any and every conceivable fashion, embracing the idea that fostering the success of a student requires a focus on intellectual, emotional, and social growth, among others.

An article from NEAtoday entitled *Top Eight Challenges Teachers Face This School Year* provides an overview of the problems that teachers can expect (from 2010) ranging from increased class sizes, technology in the classroom, to the dichotomy of parental involvement.⁷

⁶ Ryan, Kevin, and James Michael Cooper. *Those Who Can, Teach*. Belmont, CA: Wadsworth Cengage Learning, 2013. Print. Page 172.

⁷ "Top Eight Challenges Teachers Face This School Year - NEA Today." *NEA Today*. 13 Sept. 2010. Web. 24 May 2016. <http://neatoday.org/2010/09/13/top-eight-challenges-teachers-face-this-school-year-2/>

I am of the belief that the American educational system is failing the children it is meant to serve. I entered California's public education system in September 2002 and as such would classify myself as an early *survivor* of the No Child Left Behind system. I'd be remiss if I didn't reference the irony of the act that truthfully left so many of my friends behind, with a system not equipped to help them get their fair chance at success. Upon entering the system in third grade, there was evidence it was not set up to accommodate the growing diversity of students. I'm not simply talking about ethnic diversity, but rather the spectrum of intellect, learning styles, and dispositions. An Education Week article from 2015 entitled *10 Reasons the U.S. Education System is Failing* specifically referenced a demographic that I fell into upon entering the system, talented and gifted, or GATE as it was termed then.

There is a lack of diversity in gifted education. The "talented and gifted" label is one bestowed upon the brightest and most advanced students. Beginning in early elementary grades, TAG programs separate student peers for the sake of individualized learning initiatives. Though the ideology is sound, the practice of it is often a monotone, unattractive look at contemporary American public schools. District schools need to find ways to better recognize different types of learning talent and look beyond the typical "gifted" student model. The national push to make talented and gifted programs better mirror the contemporary and ever-evolving student body is a step in the right direction. Real change happens on a smaller scale though - in individual districts, schools and TAG programs. That progress must start with

understanding of the makeup of a particular student body and include innovative ways to include all students in TAG learning initiatives.⁸

That same article pointed to a deficiency in a very plausible solution to the above problem.

***There is a lack of teacher education innovation.** It stands to reason that if students are changing, teachers must change too. More specifically, it is time to modify teacher education to reflect the demands of the modern K - 12 classrooms. There are policy and practice changes taking place all over the world - many driven by teachers - that address the cultural shifts in the classroom. Public education in America needs teachers who are better trained to meet the needs of specific student populations, understand the necessary role of distance learning, and are willing to speak up to facilitate classroom change. Without these teachers, effective reform to meet global demand is not possible.⁹*

However, the teachers are not to blame here, seeing that they have to plan the curricular progression of an increasing number of students. There is no conceivable way that they could be expected to react proactively to students who need such different things. Institutionally speaking, teachers need help from the administration in the form of professional development to further their pedagogy knowledge and more importantly to foster meaningful classroom management techniques. Also, there is a need to decrease the stigma surrounding asking for

⁸ "10 Reasons the U.S. Education System Is Failing." *Education Week*. Web. 24 May 2016.
http://blogs.edweek.org/edweek/education_futures/2015/08/10_reasons_the_us_education_system_is_failing.html

⁹ "10 Reasons the U.S. Education System Is Failing." *Education Week*. Web. 24 May 2016.
http://blogs.edweek.org/edweek/education_futures/2015/08/10_reasons_the_us_education_system_is_failing.html

help. The notion that self-contained classrooms mean that sole responsibility is on the teacher is an archaic practice. The African proverb “It takes a village to raise a child” is my personal philosophy as to the best approach to educating individuals, namely in primary schools. We have to know what is developmentally appropriate to best help students not only learn but grow through those critically formative years.

My project by design is meant to address the concerns that this group puts forth in a way that is very individualized. Each of these people is dispositioned differently, even within this homogenous group of students, and that requires answers that focus on the individual rather than the overarching problems. The thought behind that is my experience will be so different that everyone else’s simply because of who I am. However, the challenges will most likely be very similar and having the opportunity to be exposed to the many different types will be extremely insightful.

Project Design

With this project, my aim is to help teacher candidates build a more pragmatic educational environment to ensure student success. The main purpose is to produce a space where teachers can think about the challenges and problems that students/teachers face on a daily basis and formalize ideas for the aforementioned goal. The project does not aim to change anything presently, but rather start the participants thinking about ways they can shift the paradigm and empower their own decisions. The benefits are far-reaching, as a more involved and connected campus community does nothing but enrich the educational experience of every student on an

individual level. Solving problems starts by asking what is wrong, presenting hypothetical solutions, and having a conversation to address thoughts and alternatives.

The group will be asked to fill out a preliminary questionnaire followed by the Gallup StrengthsQuest assessment. From that point, I will provide them with individualized recommendations and insights based on their strengths. I will also ask them to assess the usefulness of my responses based on whether they feel it would be feasible for their own implementation. Finally, I will compile the most common results and a few outliers to produce documentation that allows for synthesis of the information in a way that is presentable and informative.

The project is set to happen over the course of about four weeks, because my initial subject groups, teachers at a local elementary school, did not respond to my attempts to set up meetings and the like with them in a timely fashion. It left me scrambling to get a group of people I could utilize in a short period of time and as such my timeline shrunk to a timeframe I wish was much longer. That being said, I hope to start by May 1 to have ample time to release the various assignments every 4 or 5 days to be able to compile the information to meet my deadlines.

Though unable to begin at my projected May 1st date, I was able to start on the 5th, giving that group the opportunity to start up with the things I had asked of them. I was hopeful that the shortened timeframe would not be a problem because I was able to get all the information out and that it was relatively easy to complete quickly. However, by the time I needed to have everything done, I did not have the necessary amount of responses to complete the project in the ways I initially anticipated. It was a stressful realization and one that I thought would completely

derail my project and prove to be damning for completion of my major requirements. However, there was still quite a bit that I gained from the responses I did receive from my preliminary questionnaire.

What I Was Able to Learn From Collected Data

Below is a synthesis of what I was able to learn based on the eight responses I received in my preliminary questionnaire. I've broken this section into the headings that I created in the form and will provide personal reflections in italics throughout this section of the paper. Each heading began with a prompting question that each responder would indicate how much they agreed with the question, with one being "not so much" and five being "very much". I have replicated those questions and produced an average score that can be used to see where these respondents saw the most glaring issues to be in the schools they were observing. If responses are useful in multiple categories, relevant information will be **bolded**.

Implications of Socio-Economics

There is quite a bit of evidence to suggest that respondents found the implications of socio-economics to be an important factor. In general, low attention span, unpredictable home lives, and basic needs were identified as the affects that a student's home life can have on their capacities surrounding learning. They felt that the proper actions to take were to respond with

individualized consequences, communicate with both students one-on-one as well as parents, and develop an increased awareness of students to better accommodate their needs.

How much do you feel a student's home life impacts their potential for academic success?

(Average 4.25/5)

Based on what you see on a daily basis, what are some issues that you feel students' home lives may cause in regards to their capacities and attention toward learning?

- **Low attention span**

- Students with difficult home lives often are unable to complete homework or outside school assignments. **They tend to have lower attention spans.**
- What's going on in a student's home may prevent them from **successful listening and paying attention**, interaction with their peers, and their response patterns and interactions with adults.
- **Levels of distraction/ mind elsewhere.** Lack of sleep. Hunger. Frustration. Lack of self confidence in oneself and academic abilities. Different rule structure at home affects if or how they follow rules at school.

- **Unpredictable home lives**

- stability, new people in their life, change in living situations, new family members, loss of family members.
- **Parents' marriage (if parents get along or if there is a lot of conflict), Cleanliness, Food Consumption (healthy/unhealthy), Siblings (newborn/older, more vs. less), Parental education level/academic support**

- Levels of distraction/ mind elsewhere. Lack of sleep. Hunger. Frustration. Lack of self confidence in oneself and academic abilities. **Different rule structure at home affects if or how they follow rules at school.**
- Sleeping patterns, **familial issues**, lack of food, **any form of outside stress**, concerns for personal and family safety.
- I believe that a student's home life plays a huge role in their academic performance at school. I have seen this come into play in many of my students, but the most notable student is one who is in foster care. This student has bounced from foster home to foster home throughout the last few years. On the most basic level, this student's needs are not met at home. This is evident in his behavior at school. Often times, the student will come into class visibly upset or frustrated. His threshold for handling frustrating academic or social challenges at school is extremely low. Based on this, his ability to pay attention in class fluctuates on a daily, and sometimes even hourly basis. It is clear when this student has had a difficult weekend at home by his behavior in the classroom.
- **Basic needs**
 - Levels of distraction/ mind elsewhere. **Lack of sleep. Hunger.** Frustration. Lack of self confidence in oneself and academic abilities. Different rule structure at home affects if or how they follow rules at school.
 - **Sleeping patterns**, familial issues, **lack of food**, any form of outside stress, **concerns for personal and family safety.**

If you have noticed things you can help make better, what actions have you taken?

- **Individualized consequences**

- Allowing students opportunities to participate in after school programs (like homework club) to complete their outside school assignments. **Behavioral contracts between the individual student and teacher with possible incentives.** Constant one-on-one conversations with the student because most of these students do not receive one-on-one attention at home.
- Communication with parents, **Natural consequences/Consequences that fit students' needs (i.e. time to calm their bodies at their desk if they are being too wild at their center), Goals/Disciplinary action for individual student (i.e. behavior chart resets at increments rather than for the whole day like the rest of the class)**

- **Communication/increased awareness**

- Allowing students opportunities to participate in afterschool programs (like homework club) to complete their outside school assignments. Behavioral contracts between the individual student and teacher with possible incentives. **Constant one-on-one conversations with the student because most of these students do not receive one-on-one attention at home.**
- Having open conversations with the student to allow them to feel safe and comfortable in expressing their feelings usually helps because then you can take action or at least understand why they are acting a certain way. Also, parent

communication is key in helping a student learn and grow especially with issues happening at home.

- Providing students a safe place to talk, provide appropriate scaffolds
- If I know I can positively impact any type of situation, I make attempts to. Usually communicating with the parents, the student, and other persons involved as a group and individually are the types of action that I take.
- Offer as much support in the classroom in terms of being there for the student if they need to discuss and issue. Being verbal with parents.

Effects of School Environment

The topic of school environment was perceived to have the most profound impact on a student's ability to succeed. Nearly all respondents indicated that their schools were interdependent, with effective communication amongst teachers and staff. Furthermore, the respondents' communication with teachers and principals, in professional and personal conversations, was said to be positive and frequent. The collaboration and connectedness seems to create an environment in which valuable problem solving can take place and true growth for the professional.

How much do you feel the school environment impacts a student's potential for academic success? (Average 4.38/5)

Would you describe your school environment as independent or interdependent?

- Interdependent. Teachers and staff are constantly communicating with each other. My school is departmentalized, so it is very interdependent.
- Independent
- I think there are aspects of both independent and interdependent staff members at my school.
- I feel that it's both. Teachers are capable of running their own classroom on their own throughout the day but teachers in each place level come together to plan large events and monitor their teaching/seek feedback or suggestions.
- Interdependent. My cooperating teacher works very closely with her grade level partner to exchange ideas and plan units.
- A good mixture of both. Teachers communicate often, daily, but do not rely on each other or teach the exact same way for every lesson.
- Interdependent
- At my school, the relationship between teachers varies in each grade level. In my grade level, the teachers work very closely and have an interdependent relationship. I understand that this is not always the case, but I see the benefit of having a "grade level team" where all the students in that grade level have access to the same content due to teacher's working with one another.

How well do you communicate with other teachers, personally and professionally?

- Very well. I ask all teachers for advice and feedback on topics, including behavior management, curriculum, and classroom activities.
- communicate well
- I speak with other teachers about their classroom and daily lives every day I am on campus.
- I communicate with the teachers in my place level but it's harder to professionally interact with other teachers throughout the school outside of staff meetings. It's easier to communicate personally with other teachers in school, such as in the staff room, on breaks, and outside of school
- I speak to other teachers frequently, but very rarely do I speak with the Principal.
- I communicate well with other teachers both professionally and personally. I enjoy having close relationships with the other teachers.
- Very well. Many of the educators have something different to offer based on personality, background, and experience and I feel it is all communicated well.
- I communicate with other teachers every day. We discuss student progress, plans for the next day, lesson success/failures, etc. I also talk with other teachers about personal things as well. The teachers in my grade level know all about things happening in my daily life, such as apartment searches, job search and weekend plans. Additionally, I know all about their personal lives. We have great communication about personal and professional topics.

How well do you communicate with your principal, personally and professionally?

- Very well. I am in contact with the principal for multiple after school activities I run, for advice, and about students.
- Yes, reflect after observations, feel comfortable asking for input, and care to ask about home life
- Considering we just got a new principal, I would say I communicate fairly often with her. There is open communication between the principal and other staff members at my school
- I feel that I communicate with my principal well on a professional level for suggestions and feedback. I'm not as verbal about my personal life with my principal, but that may also be because I'm still student teaching.
- I speak with them well, however, I do not frequently speak with the principal about daily life things or student issues.
- I communicate with my principal less frequently and only on a professional basis. I have only been at this site for a month and a half so I have not had time to build a close relationship.
- My principal is not heavily involved or primarily active in my student teaching process however I often see them and converse with them both professionally(checkins) and personally as I see them around campus.
- I communicate with my principal fairly often. He happens to be a very approachable principal, and someone I have found myself communicating with about both professional and personal topics. He is always eager to offer professional advice on issues I may be having, such as my job search.

Challenges of the Curriculum

The Common Core State Standards are causing quite a bit of unrest inside and outside the classroom, with parents being rather confused and sometimes frustrated by the new techniques that drive learning. Furthermore, there is seemingly a lack of ubiquity of high quality curricular materials to supplement the standards in classrooms. That coupled with the adjustments needed to address the standards in their entirety over the course of a single school year made for the category with the most pressure on teachers. As such, this section scored the lowest of the three in terms of affect on students.

Overwhelmingly, the respondents encountered many issues surrounding classroom management and environment as well as differentiating instruction. These problems are almost surely attributed to the timeframe in which these respondents have had meaningful interaction time with these students in comparison to the cooperating teacher. Many of the group also show a great deal of care for the students and acknowledge the need yet difficulty achieving differentiated instruction.

How much do you feel the curriculum impacts a student's potential for academic success?

(Average 3.89/5)

What challenges are you currently facing as a result of implementing Common Core Standards?

- **Incongruences**

- Parents not understanding.
- Parents being confused or frustrated with new techniques.
- The standardized tests are not a good measurement of the common core skills I am teaching in my classroom
- None directly related to Common Core. The challenges I face correlate more to the curriculum I use than to the standards directly.
- A challenge would be finding good curriculum to pair with the CCSS. I think the CCSS are very beneficial and really helps student comprehension level. Unfortunately, not all curriculum supports the CCSS well. There are good programs out there but not every district has adopted those of high quality.

- **Adjustment necessary**

- Simply adjusting. I love the common core concept.
- How fast pace it is.
- TIME! The biggest issue I have faced is finding the time to teach to all of the standards. In my first placement we mapped out our plan for the whole year, and even in this scope of the year we had difficulty finding the time in our year to teach all of the standards. This is where I feel integration of subjects is key!

Over the course of your time in the MSTEP program, what challenges did you come across?

- **Classroom environment/management**

- Learning how to implement the mathematics curriculum College Preparatory Mathematics (CPM). **Learning a new classroom environment of student-run and teacher-facilitated.**
- **establishing a positive classroom environment even when my CT didn't have the same method as myself.** Understanding long term goal for the students. Gaining parent respected as a student teacher.
- The biggest challenge is coming into someone else's classroom as a secondary teacher. Although I have had an amazing experience, there have been times where I would do something completely different than my CT.
- **I have had trouble establishing classroom management. Students are quick to understand that a student teacher is not the same as the general education teacher. I've tried many techniques but subbing days are especially hard.** Differentiation can also be difficult, especially since I haven't had the students all year. I've had to adjust to teaching a class with high needs in English as a second language to a class with a high inclusion rate.
- Behavior/ classroom management
- Classroom management with a large class of extremely active first graders.
- Students with various needs including two who spoke very very little English, parent involvement/management, **adjusting to the classroom setup**
- **Differentiating instruction**
 - There were many challenges I faced in student teaching. One of the biggest challenges in my first placement was providing differentiated instruction that was

geared towards all of my learners. I had a difficult time making sure that the lessons I taught didn't exclude any of my students, but were also challenging enough for certain students. This is something that I was able to work with as I learned more about my students and their needs.

- I have had trouble establishing classroom management. Students are quick to understand that a student teacher is not the same as the general education teacher. I've tried many techniques but subbing days are especially hard. **Differentiation can also be difficult, especially since I haven't had the students all year. I've had to adjust to teaching a class with high needs in English as a second language to a class with a high inclusion rate.**
- **Students with various needs including two who spoke very very little English,** parent involvement/management, adjusting to the classroom setup

General Questions About the Teaching Profession

The responses to the more general questions about the teaching profession were much more varied, as expected, given the broad nature of the questions and their ability to be interpreted in a myriad of ways. Interestingly enough though, nearly every respondent said that the easiest thing about being a teacher has to do with being around the students and that the hardest things included time management and differentiation (instruction and otherwise). The other questions were more introspective in nature and fielded answers that reflected the difference of disposition of each of the responders.

What is going to be "easy" about being a teacher?

- **Being around students**

- Caring for every student!
- Enjoying the children
- Loving my students.
- Getting to know students individually and learning their backgrounds.
- Working with kids every day!
- Nothing's easy about being a teacher, but knowing your students love and appreciate you makes it easy to put in the extra effort with a smile on.
- Setting up a positive and supportive classroom, incorporating various content standards into a single lesson

What is going to be "hard" about being a teacher?

- **Time management**

- **Time management (both professionally and personally)**, meeting every students individual needs in and out of the classroom, learning new curriculum, communicating with uninvolved parents, communicating with Emergent Bilinguals and their parents with minimal English
- Students who are resistant to learning. Parents who want more of my time than I am able to give, budget and time.
- Time management. I want to get it all in and still do fun activities.

- **Individualization**

- Time management (both professionally and personally), **meeting every students individual needs in and out of the classroom**, learning new curriculum, communicating with uninvolved parents, communicating with Emergent Bilinguals and their parents with minimal English
- Everything else. Specifically differentiation and classroom management.
- Disciplining in an effective way (Tough but not overbearing).
- Setting up both content and behavioral expectations and curriculum for the year, gaining understanding of student needs and deciding plans for success, management of the need for one on one time with students. Teaching all subjects and standards in a depth not breadth manner
- Not being able to help all of my students in the ways that I want to.

If you had a "magic wand" what would you change?

- Change about myself for change about teaching? About myself: I would want to wake up tomorrow and have mastered the curriculum CPM. I would also have mastered time management. About teaching: I would make every student have caring households with guardians that care about their student's education.
- Provide more money for materials that allow for project based learning.
- The formation of our education system
- Provide more time with these students to establish better ties with them.
- The amount of time/ things we need to cover in a day and additional recess time. As well as a later start time.
- I would change class size to be much smaller.

- The affect politics has on education
- I would ensure that every single student of mine had a home that provided their most basic needs.

What would you improve upon?

- Not sure what this means. What could I improve upon currently? I could improve upon my time management skills. I have a very difficult time planning out and delivering lessons in the appropriate time.
- Teachers developing the whole child
- Assessment and educational policies
- Classroom and time management.
- Utilizing stations for efficiency.
- I would improve upon the resources students have access to. This might be bettering the technology or better use of the current technology.
- State testing matching up with the realistic curriculum

What would do if you had more time with the current group you are with?

- I would deepen my relationships with each of my students' guardians. I would attend more IEP meetings regarding my students. I would spend more time getting to know my students in general.
- More project based learning to incorporate science and math
- I would try different forms of classroom management to see what is the most effective
- Get to know the students better and establish better classroom management.

- Incorporate more team building activities as well as more social and emotional behavior standards.
- I would do more hands on science as well as a service learning community outreach project.
- Incorporate more social sciences within their everyday lives including more social and emotional aspects of life.
- I would create a classroom environment of support, and mutual respect. This class tends to be selfish and can be very mean to one another. It's difficult to see these students be so rude to one another.

Other

Much like the previous section, these questions yielded an array of responses. The group requested this section to be able to contribute useful information that did not fit into other categories. The largest takeaway is that the challenges and difficulties come at you from all angles and trying to be prepared for all things is rather futile. Overwhelmingly though time, money, and resources surfaced as the most imperative things lacking for both students and teachers.

What other challenges/difficulties do you see for students?

- Technology (when students do not have access to technology at home)
- Not exposed to enough of the outside world

- If my students do not get adequate support, I fear that they will fall so far behind that they will not be able to catch up
- Engagement/Focus is always a challenge, especially towards the end of the day.
- Large gaps of learning among all students.
- I see students being challenged by a slow response to intervention and support. The administrators, school counselors and other staff including classroom teachers don't always accommodate students with special needs in a timely manner, hindering their potential for months.
- Keeping up with the pace and curriculum presented in common core due to the shift and coming out of the old standards
- Relationships with other students.

How have you addressed them yourself?

- Do not ask students to complete assignments outside of school that include using technology. Allow students extra time to use technology at school.
- not currently, would if my own classroom
- I try to work with each individual student as much as possible to keep track of their progress
- I provide a lot of inquiry based questions, hand signals, think-pair-share, and "in-between" time games.
- Meeting each student at their present level and working with them where they are.

- I haven't yet because I am not of the authority yet when it comes to working with students under SST meeting goals or IEP standards.
- Yes, lessons have been extremely differentiated to accommodate all levels of learning
- I have attempted to address these by creating a classroom environment of mutual respect.

What other challenges/difficulties do you see for teachers?

- There are too many! Money for classroom activities, there is never enough time in the day/week/month.
- Being trusted by the district and parents to attempt new techniques.
- The amount of support available to teachers with an overwhelming amount of students.
- Time management: There is so much we are required to teach in a short span of time. Outlines for better ways to effectively teach would help.
- This job is difficult to do alone! We need more of us in the classroom.
- I don't see teachers getting enough paid planning time, grading time, or professional development time.
- Getting through the whole curriculum, getting students up to date and prepared for the new state testing

How have you addressed them yourself?

- Apply for grants. Increase time management skills and plan daily/monthly/yearly

- I try to divide my time equally among each individual student. However I feel this time is not sufficient enough for what my students deserve
- Talking with other teachers and learning how they manage their schedules has helped establish a good time table within my class.
- Utilizing all bodies.
- I have attempted by teaching students specific concepts in a very brief manner in hopes to at least get them introduced to the content

What I Learned About Project Design and Implementation

Going through this project has been an exemplary learning experience. Passion can only take you so far in terms of a successful project and it takes a methodical plan and implementation strategy more than anything. I learned a lesson the hard way that no matter how much time you think you need, you need more. I knew before starting that I did not have enough time but if I squeezed hard enough, I could do it, because I believe in myself. Unfortunately, nothing went according to plan and it all comes down to the design and implementation. If I could rewind, I would do the following:

- Schedule an extra two-four weeks of time to the project to account for any unexpected circumstances (10-12 week project versus 8 week project)
 - Slow communication or lack of communication
 - Need to provide demonstrations or presentations about the project for clarification
- Provide clear and detailed instructions in person to allow for clarification

- Recognize that the human factor complicates every aspect of an engineered plan
 - Pragmatic responses are imperative

The beauty of an LAES project is that it is meant to incorporate aspects of both disciplines to create a project that can be technical yet realistic, accomplishing a goal that has value to society, but is addressed in a creative and technical manner. Given an entire two quarter period with this specific focus topic, I am very confident I could have accomplished what I intended with this iteration and a great deal more.

How successful was this project overall?

Overall, I feel that my project was successful. On the whole, it was meant to be a learning experience, an exploration into a topic of high personal and professional interest and it fully served that purpose. However, being the perfectionist I am, it is hard to accept success with a project that did not yield its intended deliverable. It was a disappointing development in the grand scheme of things, but it makes me think back to a conversation I had with a professor earlier this quarter when I was feeling quite sick. I didn't feel that I had enough to give a meaningful lesson to my field placement student that day. After a lengthy conversation, my professor told me to "do the best with what you have". Since then, that has been my mantra to get me through the arduous tasks I've been presented.

With that bit of anecdotal support, I feel that I did the best with what I had at my disposal. I gained nearly limitless insights going into a credential program and if given the opportunity to

continue my studies at Cal Poly, I will be better able to find pragmatic solutions to as many of the challenges referenced in the above documentation. I was able to outline the most common challenges and strategies to address them from a group of individuals with daily anecdote to all of these situations. Having this opportunity in itself was immensely valuable as other majors do not have similar access to senior projects with such freedom. I will carry this knowledge into my future, hoping to help others foresee these challenges and be better equipped to be proactive rather than being forced to be reactive.

Societal impacts

Put simply, knowledge is power. This information could be presented to anyone interested in education, from a credential candidate up through the superintendent of a county, and there would be different value to be taken through each lens. Creating opportunities for dialogue has the ability to foster the growth that that situation may need. Teachers nationwide are putting in their best effort, doing the best with what they have, and still they face difficulties. A project like this hopes to be a small push towards shifting the paradigm towards a model that starts in the classroom when faced with a need to change policy. Starting in the individual class, you can get a real sense of what works and what doesn't.

Teachers are the future in the curricular tsunami heading the way of the current generation. Common Core brings new math and English standards, the Next Generation Science standards incorporate engineering for the first time, and social studies standards have to be on the horizon. Teaching those disciplines now requires an amalgamation of skills, knowledge bases,

and strategies to effectively teach the growing complexity of both the world inside and outside of the classroom walls.

Future work

Upon graduation from my undergraduate program, I plan to look into alternative educational opportunities that will allow me to apply my degree knowledge and passion for helping school-age youth in ways that may not explicitly be within the confines of a classroom. I want to make a difference that may not be exactly tangible, but would make an impact on the community level in the least. I have explored opportunities through my local YMCA and will continue to explore places where I can be not just of use, but of service.

Additionally, along the same lines as this current project. I could produce a longitudinal study with quarterly interventions, once over the winter break, and another over the spring break, each time making adjustments based on observations around selected “problem areas”. In this way, we utilize an iterative process that also serves as a model for potential future use to more efficiently address challenges and difficulties within the classroom. That data and feedback would be much stronger in arguing a point to support the incorporation of professional development classes into the curriculum as a means for producing the most high quality credentialed teachers in the state, country, and world.

References

"10 Reasons the U.S. Education System Is Failing." *Education Week*. Web. 24 May 2016.

"About Us." - *Liberal Arts and Engineering Studies Program*. Web. 24 May 2016.

"Career Possibilities." - *Liberal Arts and Engineering Studies Program*. Web. 24 May 2016.

Ryan, Kevin, and James Michael Cooper. *Those Who Can, Teach*. Belmont, CA: Wadsworth
Cengage Learning, 2013. Print.

"Top Eight Challenges Teachers Face This School Year - NEA Today." *NEA Today*. 13 Sept.
2010. Web. 24 May 2016.