

UC Merced

AIARU: Panel 3 - General Education and the Research University

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Symposium**

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Panel #3: General Education and the Research University

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**UC DAVIS
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I just wanted to say that there's a huge gap between 800 years and 50. [*laughter*] But I, I wanted to say in response to Christopher's [Viney] wonderful presentation that it is true that higher education has been around...

But what they also did is they provided a very liberal arts education to individuals who did not need to work. And I would say that created a long list of very strong institutions that have been around since then. When we adopted the higher, this type of education here in the U.S., the first few institutions, those that we know as Ivy Leagues, took a very similar approach to education. It was also to create enlightened citizen out of those who did not need to work. The true revolution in higher education really happened in the U.S. in my mind in 1863, or '62 or '63 when President Lincoln signed the Morrill Act. And it was for the first time when higher education was meant to help people go to work. It was very specifically designed to provide vocation. And at the time the need was to provide specialty, a very specialized knowledge to those

who would take it, practice. Those were the land grant institutions, of course that education was available to everyone. Since then, the public research university has become a hybrid between the very early European universities where liberal arts education was really the goal and the early land grant institutions where work was the goal. And so now, today, we try to prepare our students for citizenship and for work.

And that's where the tension really comes between a very specialized curriculum and a very open and broad curriculum. Coming from engineering I can tell you this tension is real and is alive and we live through it every day as we go through curricula, new curricula and changes that come not as often but at a great cost. I wanted to say however, that what I've learned--and I have been in many institutions in the Midwest--I can tell you that in my first three institutions where I was truly involved in engineering education and also at the University of Illinois as the provost in broader education across the various disciplines, you see that while there is a tension in the minds of those who are in charge of the various curricula, in reality the need the student has, which is really the ability to understand the society well so they can solve the problems that the society faces, requires both.

And that implies that our students need to specialize enough so they can become competitive workers in a global economy. At the same time they need to understand the world enough so they can place the problems in the appropriate context. And I think what we find today when we try to generate a general education on our campus is that there is not necessarily a common view on how important general education is among our faculty. So what we learn, for example, I'll give you some examples because there is a very broad range of examples you can find as [UCLA] Chancellor [Gene] Block said. It is true that every university tries to solve this issue, this tension, addresses the tension

with different solutions. And there is not really one good solution for everyone.

And every university has its own best solution and I will only describe a couple that I have seen so far. One it was in my previous institution, and then the second one here, UC Davis. So, at the University of Illinois there was for many historic reasons, a--we was not called a college but it was a division for students who would come to the university who really did not know enough to sign up for any specific college. There were students who could not select a major. They were excellent students however; it was not that these students were not capable. And by default, these students would be placed in the College of Letters and Sciences and then for those who did not want to stay in Letters and Sciences but who wanted to either go to the business school as undergrads or go to engineering or go to other schools, they would find it very difficult for the transition. And at the same time, this very large number of students were within a college that did not necessarily consider them their own and the attention was not good enough for the needs of the students. So the decision was made to move the general studies program and division outside of that particular college and make it more central to the campus and in this way make easier the transition of the students from that program to the other colleges.

And so the, the responsibility for the curriculum for that general studies division was given to the Academic Senate, and the, a group of faculty who were the board, and they would be selected on an annual basis. And they were, so there was a faculty board that was in charge of the curriculum for the program and it worked extremely well. Because then not only the curriculum was distinct, and it was developed with a purpose in mind and the purpose was to not just provide a very broad and general education early to students who needed it but also to provide enough information about the

various disciplines so the students can select. And it worked very well. It took about two and a half years really to, to make the move from LAS [Letters and Sciences] to an independent status and then also to develop a curriculum which was already in place but had to be revised.

So that was what we had there. At UC Davis, students are expected; we don't have these general studies program where students can sign up for, until they make up their mind where to go. So we students have to make a selection. In today's environment I would say that's not a very smart thing to do because there are so many options out there and the problems the students would like to solve like sustainability or energy or climate change, they are problems that do not necessarily line up very well with any particular discipline, and so students who come, for example, to our campus because they are interested in the energy problem all because that problem has really excited very much the nation about what kind of work they can do later, cannot find any particular college that has energy.

And so they're really confused about where to go, thinking, in fact they're worrying about their chance to eventually find the right path. And so artificially the students, because there is an expectation that they sign up immediately, artificially they make a decision. And eventually a great number of them finds out that that was not a good decision, so you see a lot of effort trying to transfer. Usually transfers in between college are not very successful. They end up costing the students longer to graduate. Having said that, however, the curriculum is very good. In fact, UC Davis went through a very extensive effort to revitalize the general education curriculum and the new one is going to be in place in 2011.

So it was a true revitalization of a curriculum. It took a long time for the faculty to decide exactly

how to change it and it will take even longer to implement it because the decisions were made in 2008. But what happens, as you know, every time we go through a curriculum reform, by the time its in place, it's outdated. So, what we have found out is that the most important thread in the general education curriculum is not there. And that was sustainability, so we are going to go back to revisit it. But that's what happens, usually a lot of times I say revising a curriculum is like fixing Queen Mary, changing the engines, it takes a huge amount of time. And of course the system is so complex that every time you change a course here instead of courses you impact so many other areas on the campus and it's very expensive as well, changing a curriculum. And a lot of times what happens, which happened this time around, is that you start changing the curriculum without really having a very practical estimate of the cost. And as you change it you find out that it is costing you a lot of money so that delays the process. But that's how it is at UC Davis, it's not very different from any other places but I want to go back for a moment, if I may, and speak about the tension that we normally find in professional schools between a professional curriculum and a liberal arts education.

In today's environment, if I take engineering as an example, engineers need to know a lot more than engineering for them to be successful engineers. When companies come to campus to interview engineering students, one of their complaints is that the students know how to solve equations, they know how to put circuits together but if you give them a problem, they don't know where to start. If you, if you give them a general problem. And, and the reason for this is because whatever they've learned, they were not able to put in the right perspective. So a lot of engineering schools, without necessarily yet adopting the notion of having a more open attitude towards a general education curriculum, they still want to develop engineering courses that will provide the students

the context. Which is very costly for the university because on one hand you do have your general education curriculum and on the other hand you do replicate courses that are done by the professional schools to provide what the general education curriculum could provide. Ideally I would say engineering is to come back and rethink exactly what engineers need to know and at what level of their careers they need to know that. Fifty percent of engineers do not practice engineering after they leave engineering yet the engineering curriculum is for only that fifty percent that practice it. And, and so the question is are we really doing the right thing? Now changing the engineering curriculum is not necessarily something that one university can do because we have accreditation. And when ABET [Accreditation Board for Engineering and Technology] comes to campuses, we all know that they have very specific expectations of how the engineering curriculum will be. There was a major reform in ABET which, in fact, in my mind, and I may sound as critical, did not change very much. If anything else forced the engineering schools to be even more parochial about their own engineering curriculum. And so I think, I personally believe that we have developed an education that is very costly while at the same time does not necessarily provide the quality that is required.

And, and that is going back to the importance of a general education curriculum in the education of the student. And I think it would serve the students a lot better if they were allowed to explore, intellectually, the campus and the various areas for at least a year and a half and then sign up for the specific professional schools. They would become better citizens; they are going to become better professionals. Thank you.