

What to do to Enhance Quality Learning of Undergraduates at Texas A&M University?

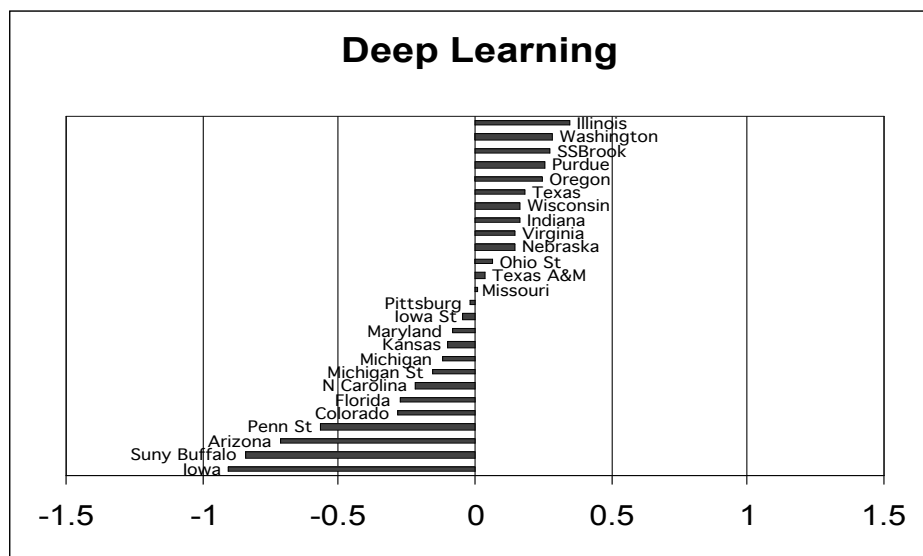
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One of the ways to achieve high quality learning is to emphasize on Deep Learning. Deep Learning refers to learning with understanding rather than rote learning. Such approach to learning leads in quality learning outcomes and the development of higher order skills and enables students to think critically.

Looking at the advantages of Deep Learning, we became curious to find out about where Texas A&M University (TAMU) undergraduates are in Deep Learning when compared to 25 other benchmark universities.

So, we examined the data from National Survey of Student Engagement (NSSE) administered from 2000-2004. Our sample comprised of 42,430 undergraduate students from 26 universities, out of which about half were seniors and half were freshmen by design. The NSSE was administered to a random sample of freshmen and seniors at each institution. Samples were drawn in such a manner that they represent the population of students at each institution in all important demographic characteristics.

RESULTS



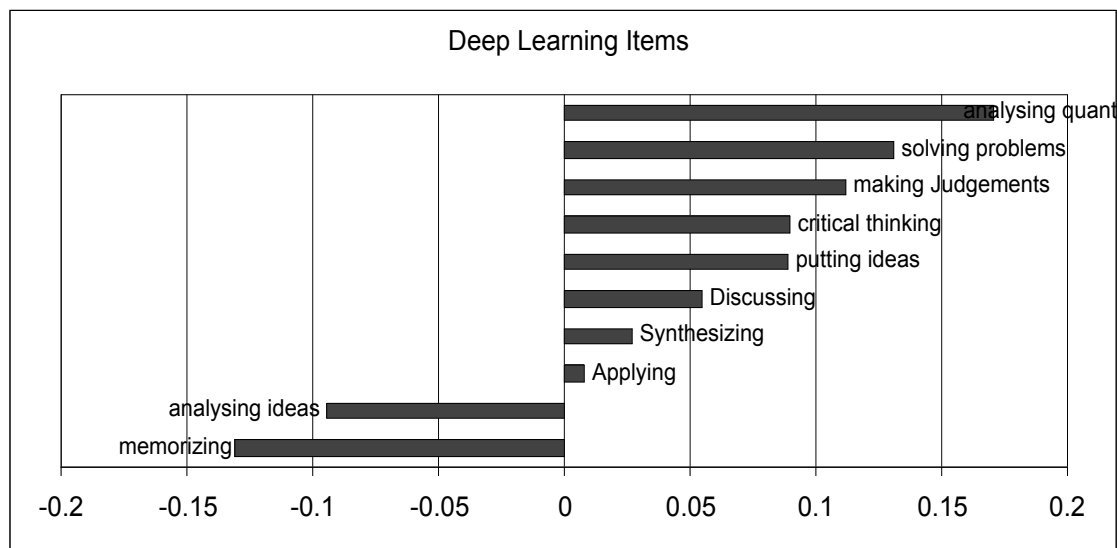
Texas A&M University ranks **12th** amongst 25 other universities suggesting about *average* engagement of the students in deep learning approaches when compared to other universities. What else did the results indicate? Undergraduates of UT Austin rank 6th when compared to their peers at 25 other universities!!!!

Looking at the above results, we wanted to go little deeper and find out about the Deep Learning domains, if any, on which Texas A&M University undergraduates fall below peers at other benchmark universities. Following are the domains that we looked at:

Did the curriculum contribute to:

1. Thinking critically and analytically
2. Analyzing the basic elements of an idea/experience/theory
3. analyzing quantitative problems
4. Synthesizing & organizing ideas/info/experiences into new ideas
5. solving complex real-world problems
6. Putting together ideas/concepts from different courses during class
7. Applying theories/concepts to practical problems/new solutions
8. Making judgments about the value of info / arguments/methods
9. Did the curriculum encourage students to discuss ideas from reading/classes with faculty outside of class
10. We also looked at a domain that is opposite to Deep Learning, which is, memorizing facts/ideas from courses.

RESULTS



The results clearly indicate our undergraduate's strengths in analyzing quantitative problems followed by making the students solve complex real world problems. One good finding is that A&M University undergraduates focus least on memorization. The results point to the areas of Deep Learning where we are not as strong and it would pay larger dividends to our undergraduates if their curriculum focused on those areas which are:

- Critical thinking
- Putting together ideas/concepts from different courses
- Discussing ideas from reading/classes with faculty outside of class
- Synthesizing and organizing ideas/information/experiences into new ideas
- Applying theories/concepts to practical problems/new situations
- Analyzing the basic elements of an idea/experience/theory.

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