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Another diminishing resource

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ProfG has referred to Mobjectivist's resurrection of a 29-year old article on the Petroleum Predicament, by George Pazik. Back then there was a considerable appreciation of the need for energy as prices and supply were more evident issues. It led to a surge in enrollment in many of the University departments that teach aspects of energy production.

However, after that time came the Reagan years, and many of the concerns with energy quietly fell to the back burner. As a result, when Universities were seeking to grow new programs (such as those dealing with computer science, information management and biotechnology) in times of limited resource they had to look for places where there appeared to be less need for faculty and the resources that go with them. Engineering programs in general are more expensive than many other programs and those that deal with the extraction and utilization of fossil fuels were more particularly expensive. This became even more true as the demand for graduates declined and student numbers fell sharply.

Whole departments (such as the Mining Department at Wisconsin where Mr Pazik earned a minor) are now closed. The Stanford web site now lists only 47 universities that teach petroleum engineering, of which number 25 are located in the United States. Within those departments the number of faculty have been reduced, as older staff retire their replacements go to the growing departments elsewhere on campus. This has a double impact. Not only is part of the institutional memory lost, but a smaller number of faculty must teach a greater percentage of the time, and there is, as a result, less time available to develop new lines of research.

Further, because each field has many different subjects within it that faculty specialize in, the number that focus on a specific area (such as, for example only, drilling technology) becomes an even smaller part of the whole. Further, since this has not been a major concern within the industry itself over the past two decades, there are not huge numbers of experts either in the industry or the National Loaboratories, who can pretend to state-of-the-art knowledge in any of these specific subject areas.

Student numbers are starting to rise again as our predicament returns, but the experts and the knowledge base is depleted and this may well strain the existing facilities. Class sizes will still not be large, relative to those of other schools, so that it may be difficult to garner Administrative support for growth. And this all takes time. In the interim, until that academic base is strengthened, it will also have an impact on how fast useful new technology can be conceived, since the teaching role will assume more dominance.
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