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## Academic Rigor: A Critical Analysis

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## Academic Rigor: A Critical Analysis

Part of the journal section "Forum: Academic Rigor"

Dennis Clayson, "Academic Rigor: A Critical Analysis"

There is a segment in the movie "Bedazzled" which appears pertinent to the present discussion. The scene is inside a classroom. A table is covered with a stack of red apples, indicating the popularity of the teacher and perhaps symbolizing forbidden fruit. Actress Elizabeth Hurley, wearing a short skirt and tight sweater, is teaching in front of a classroom full of young men. She walks to a blackboard where tomorrow's homework assignments are written. "OK boys, tonight's homework. Algebra:  $X^N + Y^N = Z^N$ , but you are never going to use that, are you?" She erases the assignment. There are cheers from the class. Hurley looks at the next assignment. "Imperialism and the First World War... what is done is done, I say. No point in thinking about it now:" more cheers from the class. "German, French, Spanish... Ja, Ja, Oui, Oui, Si, Si... Nonsense! Everyone speaks English anyway, and if they don't, they ought to:" agreeing laughter from the class. "So, no homework tonight. But I want you to watch lots of television. Don't neglect your video games, and I'll see you in the morning. Shall we say 10... 10:30... no point in getting up too early is there?"

The boys file out of the class extremely pleased. Hurley, of course, is playing the part of the devil. Some would suggest that this scene is actually closer to the truth than the satire of the movie may be suggesting.

### DEFINITION

An appropriate place to start any discussion of academic rigor would be to define the term. That may not be possible. However "rigor" is defined, some educator will knowingly and emphatically declare it wrong. Researchers in the area seem content to give it an operational definition, which many times refers back to grades and/or the students' perception of relative difficulty of the class or the instructor. While "rigor" may be difficult to define, the consequences of its absence are readily apparent, with a symptomology that includes grade inflation, unrealistic student expectations, student ignorance, and resultant problems in society.

### Grade Inflation

Average grades are presently higher than at any time in the past, and are increasing rapidly. If current trends continue, the average grade in America's colleges and universities by 2030 will be 3.56 at public universities and 3.81 at private colleges (Rojstaczer 2003). It is now common in many institutions to have 45 to 50 % of all grades in the A range while C's have become almost as uncommon as "below average children" in Lake Woebegone (Johnson 2003). Several departments

at UNI now require their students to re-take a class in which they received a C-, essentially reaffirming that this grade is now seen as failing. According to some UNI students, the current undergraduate grading standards are: A, Average; B, Breathing; C, Comatose; and D, Dead. An F is a bureaucratic grade reserved for students who drop a class but do not fill out the proper forms.

Characteristically, not everyone agrees that grading inflation is a problem. Kohn (2002) is typical when he states that grade inflation probably doesn't exist, but even if it does, "No one has ever demonstrated that students today get A's for the same work that used to receive B's or C's. We simply do not have the data to support such a claim." Perhaps, but we do know that students with higher grades than ever before are graduating from our universities so poorly prepared that industry has had to initiate their own training programs to bring new employees up to even basic standards. A letter I received from a local business person is typical. "As a career-long marketing practitioner, I was in a position to hire perhaps three or four dozen college graduates for positions I offered. I can attest to your point that the 'quality' of such graduates has eroded, such that in certain cases we withdrew our open position and made other internal arrangements instead." In addition, within the universities we find the highest average grades given consistently to the students with the poorest standardized scores. The average ACT score for UNI education majors was 21.6 while it was 23.1 for business majors (Hogberg 2002). The average grade in all CBA classes in the Fall of 2004 was 2.45 (highest departmental average was 2.80, lowest departmental average was 1.86), while certain departments in the College of Education had averages above 3.5. The undergraduate average GPA of students enrolled in the Spring of 2005 was 3.33 for the College of Education, 3.16 for Humanities, 2.91 in the College of Social and Behavioral Sciences, 2.87 for Natural Sciences, and 2.67 in the CBA.<sup>1</sup> The average ACT scores of UNI natural science students is 23.9, while it is 22.4 in the social sciences.

Students are motivated by grades. What is the effect on motivation and morale when the 99th percentile student receives the same grade as the 60th percentile student, or even the 40th percentile student?

### **Unrealistic Grade Expectations and Student Unrest**

Even with inflated grades, modern students consistently overestimate their performance. Immediately after taking an exam, students will indicate that they should receive a grade considerably higher than the one they generally earn. Some researchers have suggested that this is a "metacognitive" effect in which students who "don't know what they don't know" overestimate their performance (Kennedy, Lawton, & Plumlee 2002). Research at UNI does not support this contention. It was found that students had a notion of their actual performance, but adjusted their expected grade about halfway from their actual performance to a standard held by the students, which appears to be the average GPA of the University (Clayson 2005). Even though the students hold a rough estimate of their actual performance, they seem genuinely confused, and in some cases, angered when their inflated expected grade was not received. The students have a tendency to blame the instructor for the inconsistency (Clayson, Frost, & Sheffet 2005). Modern grading practices create an inflated expectation in the students that makes it difficult for them to accurately judge their own performance. Instead of pleasing the student, grade inflation appears to be producing students who view themselves as exceptions, while blaming others when they have not been labeled as exceptional.

Research is consistent in showing that students expect inflated grades for average work (Edwards 2000; Gose 1997; Kamber & Biggs 2002; Landrum 1999; Landrum & Dillinger 2000). These findings are complicated by the fact that the number of hours students spend studying has been declining rapidly in recent years (Young 2002).

Some data collected at UNI illustrates the problem. Over 700 students were followed through 14 intro business classes for an entire semester. The students entered their classes with an average GPA of 3.02, but expected to receive 3.27 in the new class, and thought they would "deserve" to receive a 3.34. As shown in Figure 1, the expected grades drop over the course of the semester, but at the last week of the term, students expected to receive a grade that was over 8 larger than the one received (2.99 vs. the actual grade of 2.75). Even at this late date, they still believed they "deserved" a grade of 3.22 (over 16 larger than the actual grade). As one UNI professor put it, "All my students think they are geniuses."

I have read no research on what students believe or how they react when the system gives them a reward so much lower than the one they believe they "deserve."

### **Student Ignorance**

If the research shows that students have high expectations for rewards, it also shows that they have few accomplishments to back up their expectations. Finding students who don't know the basics about the world they live in has become a media staple. Jay Leno interviewed a Cal State graduate, still in her graduation robes, and asked her how many moons the earth has. She indicated that she should know that because she took an astronomy class, and then she proceeded to give the wrong answer. While it may be true that many students might have been interviewed to find this one example, it is also true that *any graduate* not knowing this piece of information indicates a profound failure of the educational system.

For several years I administered a diagnostic test to UNI juniors and seniors. In one sample of 87 students, less than 20% knew the population of the United States to within 60 million. Over half the students believed the American population exceeded a billion; 80% could not identify the population of Iowa within the same parameters. In another sample, 67% did not know what state is south of Kansas, 2/3rds of the UNI students did not know the square root of 0.25 without using a calculator, over 50% could not identify how many degrees were in the angles of an equilateral triangle. Ninety percent of the students did not know the percentage of the U.S. population that was African-American. The given average was 25%. Students who said they had African-American friends, or who had studied racial issues in other classes were no more accurate than those who did not.

At a recent national conference, professors related the difficulties of getting students through their basic research classes. "When we come to the statistics section," one said, "it is like trying to push someone through a wall." At the current rate of decline in basic skills, I have notified my administrators that I believe in only a few years our business research class will be impossible to teach.

### **Societal Problems**

A number of years ago a social critic made the comment that oil shortages and military threats were not the primary problem facing the nation. The problem, the author said, was ignorant and uneducated people with a sense of unearned entitlement.<sup>2</sup>

Producing ignorant graduates has societal implications that range from the apparent trivial mistakes, such as the realtor who promised "380 degree views,"<sup>3</sup> or the business that stated they were "not responsible for typos or emissions,"<sup>4</sup> to the profound. So far, the United States has been very fortunate. As the standards of our own school systems have declined, we have been able to bring in the best and brightest from other nations and cultures. UNI has greatly benefited from the good fortune of finding new faculty who received their bachelor degrees in other countries. In Black Hawk County, if the medical practitioners from abroad were removed, it is arguably likely that our medical system would collapse.<sup>5</sup> So few engineers originate from American high schools that graduate engineering schools at many prestigious universities are known as "Asia Tech."<sup>6</sup> Even though engineering jobs pay well, have good working environments, and have a certain amount of social prestige, students from our school systems avoid the engineering majors primarily because the classes are difficult, require a knowledge of mathematics, and the ability to think logically. A statistical analysis at Duke University found that if the difference in grading standards were eliminated between the natural sciences and other majors, the university would experience a 50% increase in the number of natural science courses taken (Johnson 2003).

## CAUSES

Advancing any causal hypothesis is always problematic, but instead of a single cause, there appears to be a cluster of effects that have resulted in a lack of rigor in American education.

### Lack of Will

Americans in general seem to have lost faith in education. This can be seen in two ways. First, it is becoming more and more difficult to get taxpayers to support the systems. Schools bonds are more likely to fail than to pass. The increase in tuition in Iowa and other states can be seen as a response to lower tax revenues, but in the long term, it represents a shifting of the burden of education from the public to the individual. Second, many parents seem to think of the education system as a baby sitting service rather than as a preparation for future success. On a recent trip to China, our tour was blocked by a soldier with a machine gun. The entire street had been cordoned off. When asked why, we were informed that students were taking the national exam that would determine what university they could attend, and they didn't want any street noise to distract the students. I can think of no equivalency in Americans' attitudes about education. An American student has about the same probability of being selected in last year's NBA draft<sup>7</sup> as they would in getting a perfect score on an ACT exam (32 perfect ACT scores out of the 405,000 students who took the exam; 58 players selected in the draft). Yet, in our current culture, who is celebrated in the news, interviewed extensively in the media, and offered the most rewards?

Educators have also demonstrated a lack of will. First on an individual level, few instructors seem willing to hold the line on grades and rigor. Rojstaczer (2003) is typical of many professors when he admits that it has been over two years since he last gave *any* student a C. He maintains that in the current environment it is, "...almost impossible for a professor to grade honestly." If he gave lower grades, students would complain about his course, and his enrollment numbers would drop. "I don't

have any interest in being known as a failure," he stated. As indicated above, entire departments at UNI have simply changed their criterion for failing instead of demanding honest grading standards.

Second, many instructors and administrators have no interest in academic rigor. Suggesting that rigor be increased in our classes typically elicits a reaction ranging from passivity to active hostility. Harvey Mansfield, a professor of government at Harvard University, created a fervor when he gave his students an official grade and then another that he considered to be a "real" grade. When he was interviewed by the *Boston Globe*, his statements about what he thought caused grade inflation created the typical negative reaction when academics standards are challenged (Mansfield 2001). He stated:

A dean called my remark 'groundless and false,' 'irresponsible,' and 'divisive.' He accused me of having no evidence, though providing none himself. Then President Neil L. Rudenstine weighed in, responding to a demand from the Black Students Association that my statement be censured. Rudenstine, while defending free debate, stated ex cathedra that nothing he had seen, read, or heard would allow him to agree with my point. He, too, offered no evidence.

### **Lack of Direction**

Many educators no longer know what an education is or what an education should do. Definitions in this area have become lost in a relativist fog in which any direction a brave soul may strike out is immediately attacked as wrong, misguided, or perhaps even evil. If a suggestion is made that the goal of education is the creation of a moral citizen, stand aside or you will be trampled by a howling mob shouting their objections. Suggest that the purpose of education is to widen the students' horizons, and some will object that people need jobs. Suggest that education exists to train workers, and others will object that the true purpose of education is to broaden horizons. I once heard an administrator defend the poor academic performance of students by stating that it was irrelevant, because "everyone knew" that the true purpose of education was proper "socialization."

This lack of direction becomes obvious when researchers and test makers attempt to create an instrument for instructional evaluation. Kulik (2001) was precise when he stated that the problem of validating such instruments was that, "... no one knows what measure to use as the criterion of teaching effectiveness." Evidently, we cannot even consider the purpose of education to be learning. Scriven (1983) maintained, "The best teaching is not that which produces the most learning." Recently an anonymous reviewer for an educational journal informed me that I could not use the final course grade as "... a surrogate for learning."

It is very difficult to proscribe a positive change in education when no agreement exists on the purpose of the entire enterprise, let alone the rigor by which it should be pursued.

### **The Student as Customer**

More and more educators now consider their students to be customers of their institutions. Ironically, they have adopted a business model that marketers themselves no longer advocate.

Clayson and Haley (2005) pointed out a number of problems with this orientation. Several of these are directly pertinent to a discussion of academic rigor.

- The model creates and encourages a short-term perspective in both students and the institutions. Many students will admit that gaining a job comes before learning in order of importance, and that grades are a reward for effort that can be negotiated (Goulden and Griffin 1997). "If a student believes a high GPA is desirable in and of itself, then selecting the easiest professor or class to ensure maximum gain for minimum effort is a wise choice."
- Student accountability suffers in a consumer model. Responsibility is transferred from the student onto service providers (Bay and Daniel 2001).
- Students become the judge of their own experience. "If the service provider (instructor) does not please the customer (for whatever reason), then a customer fills out a form (teaching evaluation) outlining their discontent. These are completed anonymously and the customer can write anything they wish."
- The model fosters an adversarial relationship between students, faculty, and administrators. "When disagreements occur in a student-customer orientation, the educational institution should logically look to the instructor (as a provider of an essential service) for redress. It makes sense in this environment for administrators to assume the instructor is wrong in any dispute with a student, unless proven otherwise."
- Education becomes a commodity. If a student is a customer, then what is the product of education? Customers desire products because of the benefits that can be gained by their possession. The student customer is more likely to perceive the benefit of education in vocational terms, with a GPA that roughly reflects the quality of the transaction. A UNI student wrote:

One could argue that our purpose in college is no longer to attain higher thinking, but rather is a means to get a degree, which is a means to get a job, which is a means to making a moderate amount of money someday. To shorten this, college is a means to making money (Athay, 2003), 7.

- Furthermore, if "education" is a product, then the student should be able to buy it either with money or effort. There are also some logical and hypocritical-tinged inconsistencies with the model. A student-customer's reaction to an instructor could result in denial of tenure, advancement, or merit pay. Since students are unlikely to leave their biases behind when they walk into a classroom, should students be exposed only to those faculty whom they find preferable? What if they prefer to be taught only by white males, or only by black females? Should they be exposed to an instructor who presents controversial ideas, or who espouses currently unpopular opinions or ideologies? "When students are customers, who is responsible for resisting customer demands, and on what philosophical grounds?"

Seeing students as customers erodes academic rigor simply because students, in their *immediate* self interest, resist rigor.

### **Student Evaluation of Instruction**

Essentially, students punish instructors for low grades, and for rigor that is not within their perceptual norms. That this is still hotly debated among faculty, administrators, and researchers, is symptomatic of the very problems we are discussing.

Many have argued that one of the consequences of using student teaching evaluations has been a lowering of academic standards (Emery, Kramer & Tian 2001; Johnson 2003; Sacks 2000; Simpson & Siguaw 2000). Faculty believe they will be punished if they do not please students, especially in the area of grades. A survey at a Western university found that over 65% of the faculty believed that higher standards in classes would lower student evaluations (Birnbaum 2000). Seventy-two percent of the faculty thought that the evaluation process encourages faculty to "water down" their courses. Almost 50% of the faculty said they present less material in class than they used to, and about one third said they have lowered standards for students to pass a course (only 7% said they had raised standards). Feedback from students shows that these attitudes are justified. In one study, 70% of the students indicated that the grade they thought they would receive influenced the level at which they rated their instructors (Goldman 1985). It is important to note that the grade leniency effect need not exist to create negative consequences. That many faculty and students believe it exists will create the same behavioral effects as the potential reality.

Contrary to what is claimed by many educators who have vested interests in student evaluation procedures and instruments, expected grades and final course grades have been found to create a significant difference in the evaluations of instructors (see Clayson, Frost, & Sheffet 2005; Gillmore & Greenwald 1999; Johnson 2003; and Marsh & Roche 2000 for extensive reviews). Research at UNI has shown a robust grade/evaluation relationship that cannot be attributed to any extraneous variables, including instructor, student, and classroom characteristics (Clayson 2004; Clayson, Frost, and Sheffet 2005).

The relationship between rigor and the evaluations is more complex. A survey of students from three universities across the United States found that 30% admitted to purposely lowering evaluations below what the instructor had earned because the tests in the course were "too hard." Students did not believe that a demand for rigor was an important characteristic of a good teacher (Clayson 2001, 2005). Research at UNI has shown a significant negative effect of rigor (Clayson & Haley 1990; Clayson 2004). Clayson and Haley found rigor to be significantly related to the student perception of learning, but was negatively linked to personality and fairness, which made its total effect on the evaluation negative. Marks (2000) replicated this study at another university.

Students also vote with their feet. They are attracted to classes that have a reputation for not being rigorous in grading. Wilhelm (2004) compared course evaluations, grading leniency, and course workload as factors of students choosing classes. An analysis showed that, "... students are 10 times more likely to choose a course with a lenient grader, all else being equal." Johnson (2003), after looking at the results of a very large study concluded that students consistently chose the classes that gave the highest grades. Students were about twice as likely to select a course with a B+ mean course grade, even over a B- mean grade.

Since the evaluation process and the customer paradigm imply that student desires should be met, there can be considerable emphasis on giving students what they want while the university retains apparent teaching accountability and high FTEs (Full Time Equivalent,) which are often tied to funding.



## **SOLUTION**

### **Stop Modularizing**

One of the reasons our graduates are lacking in basic knowledge and academic skills is rock-hard fundamental. It is not in their interest to know anything.

Our students are bright, motivated, and very pragmatic. By the time we see them in graduate classes or in junior-senior level undergraduate work, they know how the system works and how to survive within it. They have learned that nothing is ever connected to anything else. The system pretends that connectivity exists, but students soon learn that it is a fiction. Students have found that the way to survive is to memorize (usually utilizing only recognition memory) a short list of factoids, regurgitate these on the next exam, and then erase them so they will not interfere with the next group of unrelated factoids.

Imagine a large blackboard. Draw a circle to represent a learning module. At any given time there may be a limited number of circles on the board, but not so many as to interfere with memorization and short term memory. Once the material within a circle has been tested, erase the circle. The entire board now becomes manageable with minimal effort, allowing time for other activities, including the job that is necessary to pay tuition. Also note that at the end of any school cycle, including graduation, the board is empty.

Our students even see prerequisite classes as being disconnected. Many students seem genuinely surprised if an instructor requires them to know material from a previous class, and will be upset enough to note it on the student evaluations if material is required without being re-taught. In other words, students fully expect that any material which is tested in a class will be taught in that class. Earlier this year, I informed a group of students that everything would be connected to everything else. After the second exam, a student approached me. "You actually meant that," he said as if he was used to instructors making untrue and vacuous statements.

Students not only expect modularization, some instructors actually take pride in being able to break a course up into small segments and then presenting the entire segment within one lecture period so the student will never have to see it again.

At the end the blackboard is empty. I can think of no single piece of information, or any single skill a student is required to know, let alone master, to graduate from UNI. I believe that one of the most effective and immediate things we could do to change the culture of laxity would be to require a synthesis of material for our students, and then to enforce this with measurable and testable standards.

### **Clearer Definitions and Academic Will**

Higher levels of challenge in our classes and an insistence that our students be able to perform at some established level will be achieved only if the institutions demand it. Currently, the predominate weight of reinforcement falls on the side of laxity. Lawmakers are happy if voters are not complaining, and the institutions can show appropriate statistics. These measures allow the emperor to parade around in splendor while actually being naked, and all pretend not to notice.

Parents are happy when their student brings home good grades and graduates with a Latin phrase beside their name. Students, who are the ultimate pragmatists, find an increase in rigor threatening both in terms of time, effort, and cumulative GPA, which they incorrectly believe is the ticket that will allow them to ride after graduation. Instructors find that less effort can actually be rewarding, while rocking the boat only splashes water on other activities they would like to pursue. One or two isolated faculty and administrators who insist on high standards only make life miserable for themselves by bucking the trends.

Ironically, everyone benefits by an increase in academic standards. Lawmakers would find learning institutions that taxpayers would be proud of and be more likely to support. Many students and parents are attracted to institutions with high *uncompromised* standards. The standards don't even have to be academic. Almost every institution in America with this reputation has no problem finding students. Their problem is how to handle the applicants they turn away. Students take more pride in the institution and in themselves when they attend a school with high standards. Professors also take greater pride in the students they produce, and are able to teach at a level closer to their own understanding of their disciplines. Increased standards create a win-win scenario for everyone.

### What We Could Do

Specific to UNI, to restore rigor we should:

- Define precisely the purpose of UNI.
- Find the will within the University to change.
- Establish procedures to achieve these goals in clear and measurable terms.
- Communicate clearly to the university community what is to be done, and win support and compliance.
- Create real and significant reinforcements for achieving goals.

I have believed for decades that UNI is the right institution, at the right place, and at the right time to be the best undergraduate university in the Midwest. Note that I wrote "best," not "one of the best." We should at least pick several areas in which we have expertise and become the best in these areas without compromise. This is not a matter of money, or resources. It is fundamentally a matter of will.

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## Figure 1

[Missing image]

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<sup>1</sup> Data from the UNI Office of the Registrar.

<sup>2</sup> The article appeared in a journal in the late 1970's. Unfortunately, the reference has been lost.

<sup>3</sup> Selling it. *Consumer Reports*, March 2005: 63.

<sup>4</sup> Selling it. *Consumer Reports*, April 2005: 95.

<sup>5</sup> A recent poll found that American doctors are 26 times more likely to be Hindu than would be expected by population percentages (Curlin, *et al* 2005).

<sup>6</sup> Comment made by a close friend who graduated with a Ph.D. in engineering at Carnegie Mellon.

<sup>7</sup> [www.tickets-nba-basketball.com](http://www.tickets-nba-basketball.com).



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