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UTILIZING GREAT BOOKS TO ENHANCE CONSTRUCTION MANAGEMENT CLASSES

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ABSTRACT
Books such as Upton Sinclair's "The Jungle", Steinbeck's "In Dubious Battle, and Milhauser's "A Tale of An American Dreamer are example of books that have been recently been used in classes at Texas A&M University and at The University of Louisiana. Professors can teach Construction Project Management, Estimating, and Labor Relations and Leadership using this classic literature piece This paper discusses the merits of using literature in the construction curriculum as well as the theoretical underpinnings of the great books program. Teaching style has to be adapted to include these dynamic components in the construction courses outlined and detailed in this paper.

KEYWORDS
Construction Curriculum, classic literature, Upton Sinclair, Steinbeck

1. INTRODUCTION

The construction industry in the United States is one of the world's leading markets employing 7.2 million Americans and accounting for about 7% of the Gross Domestic Product. In the global market, design firms from the United States received $5 billion in international billings while general contractors won $20 billion in foreign contracts (MacAuley, 1997). The construction industry employs 33% more people than food stores and twice as many workers as the automobile industry and service stations combined (Levy, 1994, p. 1). And yet many consider contractors to be a lowly illiterate group of professionals.

Public opinion and perceptions of construction are not ordinarily very positive. A job in construction industry is one you get when few or no other opportunities exist. Unfortunately, those within the building and construction industry have done little to modify public perceptions. A study investigating the relationship between student empowerment, attitude and motivation toward construction management course work and professional construction management was recently completed (Swoboda & Cleslik, 1997).

The study conducted an investigation of the background conditions that are influential in the forming and predicting the attitude and motivation of students. One primary purpose of the study was to investigate elements that influence attitude and motivators of students entering the construction management field (Swoboda & Cleslik, 1997). The public often considers architects and other design professionals open-minded and artistic, however, in some public opinions, professional construction has a lessor reputation. It is perceived as a field, which includes individuals who are stubborn, physical slobs, contractual cheats, sexist, and always unclean or dirty (Williamson & Grankowski, 1997). Changing the perceptions is a complicated problem.

2. WHAT CONSTRUCTION EDUCATION NEEDS

Within the construction profession, as opposed to the design professions, there is little public evaluation or praise concerning value to the common society. Corner stones, most often, do not include the building's constructor. It often seems attitudes shaped over many years of learning and experience are not necessarily flexible, the impact of negative cultural opinions cannot be ignored within construction education or in the construction management profession (Williamson & Grankowski, 1997).

As construction student's perceptions of their practical abilities increases, so does their personal attitude toward construction course work and professional construction. This gives support to the practice of programs requiring students to take internships or work at construction during the summer months. Practical experience it seems, is not only the best teacher, but, also provides students with an enduring excitement toward success in their own course work and profession (Williamson & Grankowski, 1997).

The overriding indication from this study seems to be that students indeed do enter into the construction course work with poor attitudes and motivation concerning their educational standing and the value of a construction profession. However, as they progress toward graduation this belief system is modified to be a responsible positive outlook to their future, not only in construction education, but for construction as a profession of choice (Williamson & Grankowski, 1997).

The goal of many national construction education programs is to achieve and maintain national and international recognition as premier sources for dynamic, practical and innovative building construction knowledge. The cornerstone of building a strong construction education curriculum is balancing practical experience based knowledge with academic inquiry. To accomplish this goal our graduates must possess technical strength combined with the people and communication skills necessary to be successful in the global construction industry of the Twenty First Century (Mills, Auchey, & Beliveau 1997).

Construction education must provide the opportunity for students. To master the competencies necessary to succeed in the 21st century as a building constructor. The student will have to compete in a changing global market-place. A horizontally and vertically integrated curriculum would balance the construction education concepts of practical experience based knowledge with academic inquiry. It would be a dynamic, practical, applied academic model, providing a construction program that maintains a strong identity positioned between architecture and engineering. The model would integrate people and communication skills with pragmatic building construction skills (Mills, Auchey, & Beliveau 1997). Curriculum integration is the fostering of unity between the learning process and the learner. What occurs through integration is the integration of multiple student behaviors. Knowledge becomes experience and experience becomes knowledge, thus begetting wisdom. The learner becomes the teacher and continues to learn long after the teacher is out of the academic picture (Mills, Auchey, & Beliveau 1997).

The world construction market is growing rapidly with many employment opportunities abroad. The graduate of the future may manage construction projects just about anywhere. "It is becoming imperative that faculty seek ways to prepare students for the globalization of the industry. There are three major reasons that faculty should strive to incorporate cultural awareness in course content: 1) to facilitate successful project management; 2) to prepare for the adoption of an international building code by the year 2000; and 3) to provide expertise in technical communications with an international market"(Kiisk, 1998).

"Students need to learn how to teach themselves by applying knowledge and reinventing the world around them. Many courses in construction lend themselves to this application of knowledge. And, since estimating is vital to any construction company, estimating should be taught in an application based, realistic approach and away from the objectivism approach which is prevalent in many construction curriculums" (Kirk, 1999).

Estimating and its importance to the construction firm cannot be overemphasized. Many contractors have stated that graduates will learn more about the construction industry as a whole from the estimating process in their first two years than those graduates employed as project managers or assistant superintendents (Kirk, 1999). "How, then, can we teach estimating effectively given the small amount of time that most curriculums devote to the subject? The solution is relatively simple. Teach estimating in an application based format" (Kirk, 1999)

"Reading and writing skills need more emphasis in the Building Construction Management curriculum. In order to enhance writing skills, students need to practice writing. Not only do students need to practice writing, they need to practice writing within the subject matter being taught" (Ray, 1999). It is important that students recognize writing as being critical to successful construction project management, and that the ability to write clearly, completely, concisely, and accurately is a skill which requires significant practice (Ray, 1999).

"The importance of possessing competent writing skills for the successful completion of projects is paramount to the construction industry. Employers demand that entry level employees effectively write as topics relate to specific conditions of the contract" (p.58). However, it is the individual construction management student who must make the effort to become proficient in construction writing and documentation (Ray, 1999).

The addition of writing skills to the curriculum can be accomplished by integrating this writing emphasis into specific application courses in the university construction management curriculum. The student will become a better writer and a more informed construction professional through mastery of these courses (Ray, 1999).

Academics in the field of construction, Ray (1999), Kiisk (1999), Kirk (1999), and others seem to be pointing to critical thinking, changing public perception, and communication and writing skills as necessary for our future. The problem for academicians is that no single solution can solve the multiple problems identified in the construction literature. However, the use of certain components in the construction curriculum seems to enhance the efforts of the instructor. Hands-on activities have been utilized in many programs, but complicated goals call for more than experiential activities.

3. USING AMERICAN LITERATURE

Put simply the novel stands between us and the hardening concept of statistical man. There is no other medium in which we can live for so long and intimately with a character. That is the service a novel renders. It performs no less an act than the rescue and the preservation of the individuality and dignity of the single being, be it man, woman or child. No other art, I claim, can so thread in and out of a single mind and body, so live another life. It does ensure that at the very least a human being shall be seen to be more than just one billionth of one billion. William Golding-Nobel lecture December 7, 1983

Using novels as a teaching tool in the construction discipline would require professors to work even harder during the times between semesters. Searching for interesting books that bring across the message or the lessons that need to be taught. The construction literature seems to identify multiple problems of which reading related novels might help to solve. For example, the safety record of construction continues to be one of the poorest of any industry. One way to teach just how bad it is was utilized in classes at the University of Louisiana during the 1999/2000 academic year.

4. CONSTRUCTION MANAGEMENT, SAFETY, AND UPTON SINCLAIR

Students enrolled in Construction Management 356 at the University of Louisiana were very surprised that Upton Sinclair's The Jungle was included as a required textbook in their class. During the semester much time was spent discussing construction safety, safety training, and the importance of the cost of worker compensation insurance. The Jungle, though not a construction story does demonstrate in a rather dramatic way the dismal working conditions that existed in the early 1900's for the migrant workers employed in the packing houses in Chicago. In one accident the lead character is severely injured on an underground construction site. He is relegated to begging and much humiliation. Students were asked to find recent accident statistics for the construction industry and compare between the centuries. Many students related accident stories from construction sites where they had been employed or from newspapers. The critical reflection that occurred was only possible due to the shocking story each student had experienced through reading the novel.

5. TEXAS A&M CONSTRUCTION ESTIMATING 375 AND THE TALE OF AN AMERICAN DREAMER

Construction Science 375 is the senior estimating course at Texas A&M University in College Station, Texas. The course has several learning objectives one of which is to stress the importance of attention to detail when estimating. The traditional estimating course design calls for a large roll of plans, meticulous materials and sitework takeoffs, and of course eventually producing a bid with related documents. That's the way it has always been done. Every textbook divides the project by the CSI divisions and students become experts by following this tried and true formula at Texas A&M and other universities. Industry tells us that we are not doing a good job and in fact ENR is filled with stories of cost overruns, missed bids, and bankruptcies that result from both.

Steven Milhauser wrote Martin Dressler: A Tale of An American Dreamer, a Pulitzer prize winning novel about an entrepreneur who builds one too many outlandish and lavish hotels at beginning of the last century. Students enrolled in Construction Science 375 during the Fall of 2000 were given an extra credit opportunity. That opportunity was to read Milhauser's book and come to a reading and discussion group and write an essay about what they read. Of the 78 students in the class 55 students chose to read the book and participate.

The students came to an evening wine (grape juice) and cheese reading discussion group. The students first were asked questions to test their knowledge of the novel. After they responded individually to the essay questions a lively group discussion followed where grape juice, cheese and crackers were served. Students discussed how cost overruns, time delays, and poor planning plagued the lead character of the novel. In addition students commented on the alternative assignment.

6. CONSTRUCTION LABOR RELATIONS, KARL MARX, AND JOHN STEINBECK

Construction Science 475 at Texas A&M is called Construction Labor Relations and Leadership. The course is unique because many construction curriculums ignore the topics of labor relations and leadership. The curriculum at A&M emphasizes the managerial aspects of our discipline. There are several good textbooks available on the subject of Labor Relations Law but professors are often missing the resources that assist in teaching the underpinnings of labor movement and the American workplace.

Organized labor in our industry represents approximately 20 percent of those involved with craft labor. In right-to-work states like Texas students can have a bias against the organized labor unions representing construction crafts. This bias can be explained, however the instructor is faced with the job of teaching about unions so students understand both sides of the labor management equation. During the Spring of 2001 students in Construction Science 475 were asked to read two supporting books to the Labor Relations textbook. The books were The Communist Manifesto by Marx and In Dubious Battle by John Steinbeck. The books were required reading. Many students felt that the weekly reading assignments were lengthy, but because of testing expectations most successfully read and began to understand the reasons the supplemental books were included.

The Marx work is short just under 60 pages including introductions. The book was the first assignment. Most students were enlightened by the assignment and began to have a fundamental understanding of workers and capitalists in the Marxist view. The Steinbeck novel was utilized primarily because it details a strike during the early years for organized labor in this nation. A time when labor organizers where equated with red communists. Students experience the strike, its brutality, and a disturbing ending to a rather good novel. The lesson continues with part of an exam that calls for students to divide into teams and to put on a skit from the novel.

7. STUDENT REACTIONS

Remarkably, many students admit that they have not read many books during their university careers. Some even said that they had never read any more than the Cliff's Notes for previous college assignments. Most students complained both during the beginning of each semester for all the classes discussed and at the end of the semester on the student evaluations. The student evaluations in each instance indicated students felt that the classes had more work when compared to other classes, however the overall class evaluations were excellent. Many students really

enjoyed the opportunity for assignments that required critical reflection. The novels added a dimension that would not have been available with traditional materials.

8. DRAWBACKS

Obviously professors don't get paid enough to go to these lengths, but the rewards are exceptional. Students seem to be more open to discussion and many times students read additional materials and shared with their colleagues. One real problem for professors is gaining the confidence to make the connection between the real world, the classroom, and good literature. Finding an excellent novel that really enhances teaching requires reading multiple novels and taking time to critically reflect about the lessons within the book. Most of us as mentioned above have precious time to spend investigating and reading extra books not recommended by textbook publishers or our professional contacts. This approach to teaching takes a great deal of time.

9. CONCLUSIONS

Constructors gain exponentially from reading, discussing, and critically reflecting about novels. The public perception of us changes when we discuss Steinbeck, Milhauser, Marx, and other scholarly works. The perception we have of ourselves changes when we begin to relate construction to novels and books. Students were observed discussing these books and their relationship and value to the field of construction. Many from outside our discipline became aware that constructors actually read more than their Structures textbooks.

It seems reasonable to include critical thinking activities in each course. If constructors need to improve critical thinking, communication, and creative skills and enhance the image of contractors it seems prudent to include more scholarly activities within our curriculum. The enrichment of students is worth the extra effort for construction professors and if that is not enough perhaps we should consider the impact on our personal lives. Reading is fundamental.

Multiple lessons are derived from the usage and inclusion of classic literature in the construction curriculum. Construction education as an academic discipline should be identified as a scholarly pursuit rather than as vocational/technical endeavor.

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