

Conflict Resolution and Negotiation Skills in Undergraduate Construction Management Curriculum

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The construction industry is very complex considering the challenges of competitiveness, faster schedules, and litigation. A need has been created for providing higher levels of education, experience, and training for construction managers relating to negotiation and conflict resolution. This paper will demonstrate that surveyed results from professionals, averaging 23 years of experience in the construction industry, alarmingly indicate that construction managers with up to 5 years of experience lack the skills of conflict resolution and negotiation. These findings will provide construction management educators with specific curriculum improvements to prepare construction management undergraduate students for the contemporary construction industry.

Key Words: Negotiation, Conflict Resolution, Construction Curriculum Improvements, Undergraduate Construction Programs, Project Manager Experience

Introduction

Within the construction industry, there is an apparent lack of conflict resolution and negotiation skills utilized by project managers with up to five years of experience. Compounding this problem is a lack of course content in the 4-year undergraduate baccalaureate programs in construction management relating to conflict resolution and negotiation. Conflict resolution and negotiation are core competencies a project manager is left to deal with every day on the job. Also, an essential skill for project managers is conflict resolution and tools to administer the skill effectively (Katz and Tahamhain, 1983). The objective of this paper is to show that construction industry professionals agree with the fact that conflict resolution and negotiation skills are not apparent in younger project managers with up to 5 years of experience. Data analyses will show how construction professionals in the industry agree with this finding and also how the American Council for Construction Education's (ACCE) standards and criteria for baccalaureate programs' curriculum requirements are lacking in education specialization of conflict resolution and negotiation. From this conclusion, it will expose the deficit found within the industry to professionals who are lacking in certain skills. Hopefully, this contribution will set the stage for future curriculum development and supplement the future project manager's skills for conflict resolution and negotiating.

Background

Construction management education is a new college degree program that gained popularity in the early 1980's. As the construction industry is an ever-changing arena, the role of "project manager" has developed as a noteworthy profession in the industry that is tied to a degree program. Today's project manager works as a moderator between the owner, subcontractors, and architect to orchestrate faster construction projects by being directly involved with each entity.

It was not uncommon to have project managers brought in from the building trades and superintendent ranks. Rough around the edges, these first rounds of project managers served very useful during their time, but the sophistication of the construction industry today has made their method of project management obsolete. The age of computers to produce sophisticated schedules, reports, and correspondence makes a college degree a necessity to operate in today's industry. In the early years, construction management baccalaureate programs stemmed from civil engineering backgrounds. Today, there are a myriad of different programs that can be based upon, from an architectural base all the way to a business science technology base. The bottom line is that the construction management programs must always be re-tooled and evaluated with the industry professional's feedback. In an ever changing industry, construction still has two skills that will always be needed. Conflict resolution and negotiation are probably the most used tools in a project manager's toolbox. With the ever changing world moving more towards litigation, we have seen the number of construction disputes increase dramatically as we move closer to a newer and more modern construction industry (Cheng, Suen, and Lam, 2002). Without negotiation skills, conflict resolution issues will take to the side of the individual who is most versed in negotiating despite whose position is more beneficial.

Research Method

A thorough investigation of technical papers found within the Journals of Construction Engineering and Management from 1983 to 2002 have been reviewed. Every paper found that related to this topic has in one way or another touched upon the fact that project management education continually needs to be refined within industry feedback. However, the findings in this research will point out trends in comparison with the construction program's curriculum guidelines to measure a constant.

The survey questionnaire was created to investigate the perceived need of Dispute Resolution and Negotiation skill requirement for successful project managers. The first two questions asked in the survey related to their professional role and years of experience in the construction industry e.g. professor in a CM program for ten years, or project manager, or president of the firm etc. The third and fourth questions related to the importance of negotiation and conflict resolution skills for a successful project manager. The fifth question related to the top recurring deficiency in college graduates from CM university degree programs during the first five years after graduation. The sixth question related to deficiency in curriculum content of four year degree programs, if any in the context of the deficiency. The seventh question inquired about the possibility of creating a three credit hour course on Negotiations and Conflict Resolution. The table contained in the Appendix shows the responses given by each respondent of the survey questionnaire. The questionnaire was initially tested by two university professors, teaching in four year CM degree programs, and two experienced project managers in the construction industry. Thereafter the survey questionnaire was administered to a survey sample of 105 individuals. The response rate was 20% which is considered satisfactory for similar studies.

The document 103 of American Council of Construction Education (ACCE) includes Standards and Criteria for Baccalaureate and Associate Programs accreditation. The document provides a roadmap to develop and maintain accreditation of a four-year Construction Management programs in the US. In section 3.3 of document minimum curriculum and category

requirements of each area have been specified. Five curriculum categories have been identified including General Education, Mathematics and Science, Business and Management, Construction Science, and Construction. Instructional hours or semester hours for each category have also been stated in the standard. The minimum aggregate of both Construction Science and Construction combined requirement is 50 Semester hours of academic credit. The section 3.3.2 deals with subject matter requirements, which specifies minimum academic coverage of specific course subject matter that is essential for a graduate to function effectively in a construction industry environment. The section 3.3.3 provides a comprehensive list of required fundamental construction topics. The purpose of the section is to ensure that each CM program covers a minimum core of construction principles and practices. Also provided in this section is a Curriculum Topical content table (reproduced in the paper), which is followed by all the ACCE accredited programs. The current table does include Construction Law and a sub area of Administrative Procedures to Avoid a Dispute. However, Negotiations and Conflict Resolution topic is not included as such.

Data Collection

A questionnaire was designed to obtain data required to test the hypothesis. There were 7 items asked such as their role in the construction industry, years of experience, and questions related to their years of experience to validate the hypothesis of project managers lacking conflict resolution and negotiation skills in their observations. A download of ACCE form 103, listed below, shows the curriculum requirements for undergraduate construction management programs to the extent of conflict resolution and negotiation content requirements.

Accreditation Requirements

The American Council for Construction Education's (ACCE) form 103 is a form to define the standards and criteria by which those construction programs seeking accreditation or re-accreditation are to be assessed. Form 103 is the base line for criteria for any construction program to be accredited. When reviewing form 103, there was no specific course requirement related to conflict resolution or negotiation at this time. ACCE is constantly evolving and requires the feedback from the industry professionals so that they may continually improve upon their requirements as the construction industry changes to better prepare all students seeking undergraduate Construction Management degrees.

Table 2

ACCE Curriculum Topical Content

Curriculum Topical Content	
General Education	Construction
Communications	Estimating
Ethics	Types of Estimates and Uses
Humanities	Quantity Takeoff
Social Sciences	Labor and Equipment Productivity Factors
Mathematics and Science	Pricing and Price Databases
Analytical Physical Science	Job Direct and Indirect Costs

Mathematics and/or Statistics	Bid Preparations and Bid Submission
Business & Management	Computer Applications
Economics	Planning and Scheduling
Principals of Management	Parameters Affecting Project Planning, to include the area, owner
Accounting	environmental issues
Business Law	Schedule Information Presentation
Construction Science	Network Diagramming and Calculations with PM
Design Theory)	Resource allocation and Management
Structural Mechanics	Computer Applications
Electricity	Construction Accounting and Finance
Thermodynamics	Cost Accounting and Industry Formats
Soil Mechanics	Fixed and Variable Costs: insurance, bonding, marketing, general
Civil	and administrative expenses
Electrical	Bidding and Procurement Practices
Mechanical	Record and report Practices
Structural	Capital Equipment, Depreciation, and expensing
Building Codes and Standards	Forecasting Costs, Cash Flow Requirements
Construction Graphics	Payment Processes and Time Value of Money
Basic Sketching and Drawing techniques	Construction Law
Graphic Vocabulary	Construction Contracts, Roles & responsibilities of Parties
Detail Hierarchies, Scale, Content	The regulatory Environment and Licensing
Notes and Specifications, Reference conventions	Lien Laws and the Contractor's rights
Computer Applications	National and Local Labor Law
Construction Surveying	Administrative Procedures to Avoid Disputes
Survey, Layout, and Alignment control	Safety
Site organization, Development	Safe Practices
Construction Methods and Materials	Mandatory Procedures, Training, records, and maintenance
Composition and Properties	Compliance, inspections and penalties
Terminology & Units of Measure	Project Management
Standard Designations, Sizes, and graduations	Concepts, Roles, and responsibilities
Conformance References and Testing techniques	Project Life Cycle
Products, Systems and Interface Issues	Alternate Delivery Methods

	Project Control and Quality Control
	Project Documentation
	Managing Project Change
	Labor Relations

Results

The average years of experience of the professionals surveyed was 23. The most experienced individual had 40 years and the least experienced was beginning with a 5-year tenure. The sample that represented the construction industry as a whole has many years of experience. Knowing this, there can be a good feeling about the consensus regarding conflict resolution and negotiation based upon the many years of experience from our survey. All 100% of the respondents felt that there should be more education at the 4-year baccalaureate level related to conflict resolution and negotiation. Most (90%) of the respondents felt that there could be enough content in conflict resolution and negotiation to justify a whole 3-credit hour course. ACCE standards and criteria found within form 103 do not require conflict resolution and negotiation as a required topical content for CM programs. Yes, negotiation and conflict resolution are briefly touched upon in business and construction law courses. Results from the questionnaire survey conducted for this study show that out in the construction industry there is a trend of project managers with up to 5-years of experience lacking conflict resolution and negotiating skills. The results also indicated that these skills are essential for successful projects.

Negotiations and Dispute Resolution Skills

Construction Management has been and continues to be a developing discipline. The fact that Construction Management is, relatively, a new discipline and program of study, it will continue to evolve. Industry response and feedback is crucial for its success. The construction industry remains volatile and continually changing, which requires that our college CM programs must remain dynamic and responsive to changes that occur in the industry. Getting project managers up to the industry standards through course work and lessons in class is an essential requirement. Also, we must tailor some classes to simulate to the real world challenges faced today. Learning only textbook theory is not the norm for a professional who works in the construction industry. Management of people is one of the major job specifications of a project manager. Each individual, who works in the industry, is different and thus it is not humanly possible to plan into a textbook “people behavior” so that we know what to do in the event of a conflict and how to negotiate under the circumstances. Real world examples and case studies need to be incorporated into CM program curriculums. Negotiating is a skill that needs time and experience to master. There are several fundamental skills and exercises that can be incorporated into 4-year baccalaureate programs along with conflict resolution skills. Conflict resolution and negotiation run hand in hand in the construction industry, where we need to apply these skills. One cannot be used without the other especially if it is understood that it is the “people” who carry out project management.

Conclusions

By seeking feedback from the construction industry and a review of form 103 from ACCE this study has identified that conflict resolution and negotiation are lacking among project managers that have up to 5 years of experience. The ACCE form 103 which is the standard and criteria for baccalaureate programs for construction management do not require a course in conflict resolution and negotiating. Conversely, it was found from the surveyed results of professionals in the construction industry of various positions with an average of 23 years experience that as project managers, they have observed a lack of conflict resolution and negotiation. Almost all of the professionals agreed that the 4-year baccalaureate programs were lacking in dispute resolution and negotiation skills. Most of the respondents (90%) felt that a three (3) credit hour course related to conflict resolution and negotiation is needed to be taught in the undergraduate construction management programs. Respondents noted that there could be enough course material to justify a three credit hour class solely related to conflict resolution and negotiation (i.e. lectures, case studies, Co-ops, guest speakers, research) to develop a three credit hour class. Knowing this apparent deficiency within the construction management programs and moving forward in and ever changing industry, we need to act now. The next step based upon this knowledge of research would be to develop a curriculum for a three credit hour course related to conflict resolution and negotiation to be incorporated into the ACCE standards and criteria for construction management baccalaureate programs.

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APPENDIX **Questionnaire Survey Responses**

Professional Role	Years of Experience	Negotiating Is	Conflict Resolution	Top Reoccurring Deficiency	o 4-Year B.S. Programs Lack Conflict Resolution/	Is there Enough Content To Justify a
In industry	In Construction	Difficult Skill	s Difficult Skill	With New Project Managers	Negotiating Education?	-Credit Hour Course?
College Professor	13	Yes		Conflict resolution	Yes	Yes
College professor	15				Yes	
Vice President	10		Yes	Conflict Resolution	Yes	Yes
				Negotiating		
Owner	40	Yes	Yes		Yes	Yes
Sr. Level Project manager	20		Yes	Conflict resolution	Yes	Yes
				Negotiating		
President	30	Yes	Yes	Negotiating	Yes	Yes
Vice President	26		Yes	Conflict Resolution	Yes	Yes
Superintendent	27	Yes		Negotiating	Yes	
Superintendent	32		Yes	Conflict Resolution	Yes	Yes
				Negotiating		
Director of Construction	21	Yes	Yes	Conflict resolution	Yes	Yes
Vice president	23	Yes		Conflict Resolution	Yes	Yes
Owner	30	Yes		Negotiating	Yes	Yes
Director of Construction	25	Yes		Conflict resolution	Yes	Yes
				Negotiating		
College Professor	38		Yes	Conflict Resolution	Yes	Yes
				Negotiating		
Owner	30	Yes	Yes	Negotiating	Yes	Yes
Owner	38				Yes	Yes
President	23			Conflict resolution	Yes	Yes

College professor	15	Yes			Yes	Yes
Project manager	5	Yes	Yes	Conflict resolution	Yes	Yes
Sr Level Project Manager	13		Yes	Conflict resolution	Yes	Yes
Project manager	10	Yes	Yes	Conflict resolution	Yes	Yes
<i>Average</i>	23.04	57%	57%	<i>Conflict Resolution</i> 62% <i>Negotiating 43%</i>	100%	90%