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Abstract

Construction industry is a dynamic, project based industry in where many problems occur due to communication issues. As it is proven that effective communication and conflict resolution abilities have a strong correlation between them, communication in the construction industry should constantly be improved. Unfortunately, the existing construction curricula do not offer enough courses which would help students to communicate effectively. Embedding technical communication into curricula and introducing courses such as Construction Communication aiming on producing construction management (CM) graduates with good writing and speaking skills are necessary. However, written and verbal languages are not the sole means by which individuals exchange information. Non-verbal cues play a significant role in communication. Therefore it is necessary for CM graduates to master the skills of using and reading body language. The literature study for the subject of communication in the education shows that body language and non-verbal communication were not taken into consideration yet. They are primarily the subject areas of anthropologists, linguists, and social psychologists. This paper aims reviewing the role of non-verbal communication skills in construction business and highlights the importance of bringing the topic into classroom.

Introduction

In general, communication can be considered as the process of transmitting information from one point to another. In construction industry, this transmission process may occur between one individual and another, or between one organization and another. Because of managing building projects requires collaboration and coordination between the stakeholders and communication between all the members, in order for each project to be delivered successfully, effective communication is vital[1]. Just as in an organization, during a building project, achieving coordinated results, managing change, motivating employees and understanding the needs of the workforce depends on effectiveness of the communication[2].

Construction is a service business. Interpersonal skills which include communication skills play an important role for the success of a project. In fact construction business is often referred as "people's business" to emphasize the importance of interpersonal skills. The people working in construction industry are diverse from the perspective of educational and cultural characteristics of its employees. A typical example could be given for a superintendent's situation at the job site. A superintendent must possess certain qualities in order to communicate with both unskilled laborers who sometimes may have minimal education and at the same time a project owner who can be the highly skilled CEO of a multi-million dollar firm[3].

Construction industry is a dynamic, project based industry in where many problems occur due to communication issues[4]. Even in a relatively less complicated project (single family house),

communication between the house owner (the client), the designer (the architect), the contractor (and its workforce), the material suppliers and the planning and building control officers will play an important role[5]. In a complex communication network with several key actors of the building process, existence of disputes seems inevitable. In fact, as in the summary of the Report of the Australian Federation of Construction Contractors (AFCC) it states[6]:

> "Construction industry claims and disputes have now become an endemic part of the construction industry … It was found that the problem of claims and disputes in the construction industry is a worldwide phenomenon".

Verbal and written language is not the sole means by which individuals exchange information. Non-verbal cues have a significant role in communication as well. As Kurien[7] states in her article; Albert Mehrabian, a professor emeritus of psychology came up with the 7%-38%-55% rule. According to his study in 1971, he mentioned that there are three elements to any face-to-face communication 7% words, 38% vocal tone and 55% body language. He also stated that nonverbal communication is pivotal for communicating feelings and attitudes[7]. So it may be beneficial to master the skills of using and reading non-verbal cues to improve communication in construction.

This paper aims reviewing the role of non-verbal communication skills in construction industry and highlights the importance of bringing the topic into classroom within the context of a Construction Capstone course.

Literature Review

The literature study for the subject of communication in the industry shows that most researchers focus on how to improve the communication based on technological developments, information flows, communication media, information and communication technologies (ICT) etc. On the other hand, body language and non-verbal communication is primarily the subject areas of anthropologists, linguists, and social psychologists. However, in the last decade these subjects became more popular in regards to soft skills, business management and dispute resolution. Although, the number of studies whose focus are solely on the body language and nonverbal communication in conflict management, the construction related research is almost nonexistent. Therefore, the literature study in this paper is divided into two; first part focuses on body language as a tool of non-verbal communication in business perspective and second part focuses on the communication problems in the construction industry.

Body Language & Non-verbal Communication

Body language refers to nonverbal form of communication. According to Rane[8], without contribution of the non-verbal expressive cues, the spoken words are not enough for mankind to communicate. In order to understand personalities, people rely on the social cues[9]. This is also true in business environment. Ability to decode social cues improves communication and proper interpretation; along with the use of non-verbal cues increase the effectiveness of business interactions[10]. By mastering the skills of using and reading body language, one would gain a tremendous advantage in business negotiations. Studying what is not being spoken aloud in

words, but expressed in body language, is critical to achieve a win/win outcome in a negotiation process[11]. Non-verbal communication can boost the influential impact on individuals[12].

By mastering body language skills, employees contribute to their personal and organization's success[8]. In a higher level, communication of groups and teams, an organization has to maintain information flows across professional, departmental, team and/or functional boundaries and so it accounts for some extremely complex processes of interaction, especially within larger and more complex organizations[5] and these information flows should be free of any misunderstandings and misinterpretations.

Communication in construction industry

Recent findings indicate that the performance in construction industry is highly affected by the ineffective communication practices[13]. One reason for ineffective communication comes from the temporary nature of the projects. This reason also leads to inevitable conflicts; in construction process, there are several key actors who only get together for short term projects.

Sometimes integration of migrants into workforce in construction sites could be the case; resulting a serious language barrier. For example in Loosemore's[14] work, communication problems with foreign workers are identified as the fifth most important problem to be addressed in improving the productivity of Singapore's construction industry.

Different objectives between stakeholders raise the potential for conflicts[5]. Obviously this situation does not help for effective communication. As the projects get more complex, achieving and maintaining effective communication become more problematic. This solely may be the reason why literature in communication in construction industry focuses on solutions within the technological developments, such as information flows, communication media, information and communication technologies (ICT) etc. The majority of communications in construction projects take place between individuals using face-to-face meetings or through other media such as phone, fax, e-mail and letter, all of which can be regarded as interpersonal communication[5].

According to Sunindijo et al.[15], a non-verbal cue is one of the major factors in social competences. People accomplish verbal communication by listening. Therefore listening is crucial; however almost two-thirds of a conversation's actual messages were provided with non-verbal actions[16]. Developing skills in non-verbal language is essential to understand a person and/or a situation during the project. Having good listening and understanding skills distinguish great leaders from the ordinary ones[17]. This is particularly important in construction organizations that the development of leaders is highly critical in today's business environment.

Integrating Non-verbal Communication Skills into a Construction Course

According to many researchers, construction is a technology and project oriented field, and the industry is focused on management skipping the issue of leadership[18,19,20]. There is an

undersupply of leaders in construction industry[21]. In today's challenging globalized work environment, proper leadership skills are the major expectations of construction organizations. Many construction programs in universities are mainly technology and project oriented and they do not include courses towards the development of people skills. Rubin et al.[17] quoted the Arizona State University Professor Bill Badger's statement in order to emphasize the importance of social intelligence:

> "Construction is a people's business. In this business you are hired for your technical skills, fired for your lack of people skills and promoted for your management skills".

Close interaction with industry professionals is required in order to integrate social intelligence skills to construction courses. The professionals need to bring their experience into classroom either by being part of the seminar and capstone classes or supporting research by providing funding. An example of industry professionals' contribution is given below:

Currently, in the Construction Science and Management Program Curriculum at the University of Texas at San Antonio, a Construction Capstone course is offered in the senior year. Senior Capstone Project emphasizes and helps students to practice how to use bid documents, contract documents, perform estimating, scheduling, understand the mechanism of logistics, safety, quality control, project administration, close-out, and master the communication with stakeholders and construction staff.

When covering the above mentioned topics during the laboratory hours of the course, students are trained by the instructor on non-verbal communication skills. These qualities especially become an integrated content when covering the construction administration during the course. The ultimate goal of the students is to make a presentation as a team (the team represents a construction company) and compete against each other in front of the construction industry professionals at the end of the semester.

One of the local construction companies provides the contract documents for a project that was already built by that company. Students make up different competition teams. The construction company's project team is invited to classroom at the end of the year. The competition teams prepare a presentation aiming to be awarded the job. The invited construction company acts as the Owner of the project. Each student acts as a different type of construction professional either a project engineer, superintendent, project manager, estimator, general manager, etc. Depending on their role in their respective companies they use possible non-verbal communication techniques reflecting expected characteristics from a specific type of a professional. The non-verbal cues expected from a general manager vs. a superintendent are obviously different. It can be considered that a general manager performs his/her job more at the strategic level whereas a superintendent performs more at the center of site operations. This differentiation is demonstrated during the presentation.

Construction firms have diverse business segments in which future graduates can be employed depending on their type of strengths. In whatever segment they are employed, they are expected

to be the future leaders in their positions. Earlier in the curriculum, many of the interpersonal skills are introduced in Construction Management-I course which is offered in the third year. For example the issues related to conducting a project meeting, leading an estimating group in a project, leading crews at the job site, or negotiating as a purchasing manager are covered during those lectures. A specific example is given on how the attitude of a project manager can affect the project success in a positive or negative way during project meetings. Especially in architect-owner-contractor meetings, the image of the construction company is totally dependent on its attending people's non-verbal and verbal skills. Being late for meetings is a basic example of an image eroding non-verbal cue. On the other hand another factual example is that during the daily operations both at the job site and the office, project engineers, managers, superintendents and trades are motivated with "get the job done" attitude. The constant pressure against time, budgets and quality affects people's non-verbal cues and they can be very influential on employees' motivation. Similar examples are revisited in Construction Capstone course but this time more emphasis is given to presentation rehearsals.

During rehearsals, students are trained by the instructor for their respective professional roles that they have in their company. Students complete the required internship in their third year of study. Therefore, by the time they take the Construction Capstone course, they are familiar with different construction professional role models from different segments. In addition, the instructor's industry experience brings many advantages while training students for non-verbal communication skills. Specific gestures, posture, eye contact, physical appearance (dress), expressions that imply self confidence, listening to others, possible reactions, the distance with the audience while speaking are practiced during the rehearsals.

During the final presentation, invited construction company's professionals ask questions to the competition team. In addition to technical knowledge and jargon, this is where students are also required to demonstrate the specific body language skills pertaining to their roles. This way, they convince the audience that they have gained the basic physical professional skills.

The assessment of competition teams is made together by the faculty and invited construction company professionals. When the invited construction company professionals were asked about their opinion on the given presentation by the students, the feedback was mainly focused on their presentation skills which had a lot of non-verbal communication techniques. They gave a very positive feedback and mentioned that these skills are the most important skills that they expect from their employees. They also mentioned that most of the time, jobs are won by the performance shown during presentations to owners. Needless to say, the overall performance of the presentation is the combination of technical knowledge, verbal and non-verbal skills.

Conclusions

Historically construction people came from diverse backgrounds, experiencing and learning the profession in field practices. This trend has changed as projects evolved as larger and technologically complex. Today's projects comprise people from unskilled laborers to highly skilled top educated executives. Construction is not only composed of technical and project related issues. Projects are accomplished by people's efforts and construction business is often

referred as people's business. Communication is the most critical factor of construction projects. In order to complete projects, people need to communicate. Despite the advancements in communication technologies, construction project participants mainly prefer face to face communication[5]. Face to face communication also allows practicing non-verbal communication. Due to its highly diverse population, construction communication needs to include high level of non-verbal communication in order to overcome the challenges associated with diverse backgrounds.

The CM students need to develop non-verbal communication skills in order to grow as successful leaders and unfortunately current curricula in construction programs lack such skill development for students.

The paper has addressed this shortcoming and provided an example on how to integrate non-verbal communication skills into a construction course. This topic is the vital component of a leadership development in construction business in which industry professionals urge educators to bring the issue into curricula. At the same time, collaboration is also expected from industry professionals by cooperating in seminar and capstone project courses and/or providing funding for research projects.

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