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A Career Trajectory Model: Communication Skills for Construction Management

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This study explored the relationship between communication skills and career advancement for construction managers. The synthesis of grounded practices to communication theory was inclusive of a literature review, and related studies combined with observations and interviews in the field were used to develop a career trajectory model. This model is presented with quantitative and qualitative measures to validate the theory provided. Results from field observations, interviews, and validation measures are discussed and summarized. The study concludes that construction managers may accelerate their careers through conscientious efforts to develop their personal communication skills.

Key Words: Communication, Career Trajectory, Construction-Management Education

Introduction: Communication in Construction Management

“The ability to communicate effectively and appropriately is learned and, therefore, must be taught (Morreale et al, 2000).” A thematic and persistent problem of poor communication in the construction industry is well documented (Dave & Koskela, 2009), and perhaps the challenges in construction industry are more apparent than other industries due to its complex and unique nature for every single project (Debs & Shaurette, 2020; Dainty, Moore, & Murray, 2006). Construction managers (CM), at the core, may truly be considered *professional communicators*, and studies suggest that CMs communication skills are not sufficiently developed to perform their duties (Odusami, 2002; Gorse & Emmitt, 2009). An engaged CM must communicate daily with owners, developers, architects, engineers, tradespeople, subcontractors, materials suppliers, bankers, lawyers, surety agents, and more (Shohet & Frydman, 2003; Laufer et al., 2008). Furthermore, CM’s are expected to effectively translate inputs from myriad stakeholders to others working on the construction project. As CM’s work through the daily tasks, meetings, and other dynamics, effective communication empowers them

to find efficiencies and equip others with the necessary information and resources to perform their duties (Laufer et. al, 2008).

As CM's become mediators between the several different categories of stakeholders, their role becomes less about technical knowledge and more about *communication*—facilitating the passage of information between parties and ensuring that actions are taken consistent with the information and in a timely fashion for the necessary progress on the project. This career progression is a trend across most white collar professions. Our research establishes and validates a descriptive model for the increasing importance of communication skills with increasing experience in the CM field.

The synthesis of grounded practices and communication theory in this research was inclusive of a literature review (Dainty, Moore, & Murray, 2006; Lee & Kim, 2018; Nahyan et al., 2019), effectively forming or guiding the development of the central model for this study; that is, the effective use or application of communication, in general, promotes the CM's ability to advance their individual career trajectory. And, such effective use of communication skills accelerates that career trajectory, while technical skills become less critical as CMs advance in their respective careers (Van Heerden et al., 2023).

Methodology

Based on field-based research, this study suggests a theoretical model that consists of key principles of communication to help create a broad framework grounded in the actual work and experiences of professionals. This model is an attempt to synthesize the grounded communication practices in the workplace within broader understandings that can help strategize training and operations' efforts in the construction industry. The framework can also serve in further developing curriculum in construction management degree programs. The themes, trends, metaphors, and principles of this framework are broadly useful in establishing the construction manager (CM) as a leading communicator in the industry. The framework further assisted to explore the connection between effective use of communication tools and skills to the career trajectory and advancement of a construction manager.

After the development of the theoretical framework, we invited peer debriefing from over 70 known construction industry professionals and received responses from 53. Each of the peers have worked in the construction industry, ranging from 2 years to 56 years of construction experience. The participants were selected from the researchers' network based on their experience in the construction industry. The debriefing was collected over e-mails and the results were analyzed with statistical methods as explained in the following sections.

Field Observations

Observation 1

One observation in the field included an exchange between the design team, the general contractor, and the HVAC subcontractor on a large high-rise residential development. An updated version of the mechanical system had been designed, but the HVAC subcontractor did not have access to the software in order to sync with the latest version of the drawings. In this case, while the necessary information (i.e. correct, accurate, up-to-date drawings) existed and was available from one stakeholder, it had not made it to another stakeholder (the HVAC sub). It fell to the CMs as project managers to complete the connection between design and subcontractor—in this case a simple

recognition that the HVAC sub was not accustomed to working with digital drawings and was unaware of the synching feature of cloud-based software. The discovery of the disconnect was made in a face-to-face meeting. So, the latest and most advanced software available cannot avoid or solve all communication problems without some focused facilitation. Effective communication draws upon the complete complement of tools and strategies: from fundamental interpersonal communication to cutting-edge technologies.

Observation 2

Mediation of information is a common activity for the CM. Even at the early-career stages, the CM quickly learns this role. One of the first tasks for many CM interns is processing submittals. This activity requires a thorough review of the written specifications and a determination of what material samples, shop drawings, or technical details are required for the owner's review (Coleman, 2004). This process is carefully documented and involves written communication between the subcontractors, vendors, and suppliers through the construction manager to the owner, architect, engineer, or owner's representative. While all stakeholders are invested in the ultimate success of the project, the field engineers are specialists focused on individual components of the project. They are not always attentive to the complex relationship among all components. The CM therefore plays a vital role as the mediator for volumes of information, attending to the specific details as well as the holistic relationships for each project.

The idea of CMs as a communication mediator naturally leads to the need for an individual who can manage communication conflict. The purpose of language is communication while the goal of conflict resolution is to achieve mutual agreement (Adejimola, 2009). In many cases, the informational and communication disconnections or misunderstandings within a project are fundamentally—or will become—conflicts, whether large or small. If not resolved early, one small miscommunication can become a costly legal conflict. One example commonly found during the construction process is called clash detection. This occurs when engineered systems overlap and two different systems are designed to occupy the same space, e.g. structural steel and mechanical ductwork. It often falls on the CM to resolve that conflict of space with the most economical and time-efficient manner. Conflict resolution leads to a whole system of communication documents, processes, and strategies that are designed to mitigate conflict.

Observation 3

Equally important to conflict resolution is conflict prevention (Ramsbotham et al., 2011). Central to the role of a CM is the need to facilitate communication between parties in order to prevent conflict. Facilitation is a common prevention tactic and several studies have been performed to evaluate its effectiveness (Beardsley et al., 2006; Schrodt and Gerner, 2004). Conflict prevention requires a set of skills that are often gained through experience and foresight. The anticipation and expectation of conflict can lead an experienced CM to take actions which prevent such conflict from happening. Conflict prevention skills are therefore dependent upon the acquisition of communication skills, which are intertwined with experience.

Early in a CM's career, they are generally very closely connected to very specific tasks, duties, objects, and systems. For example: a field engineer may be assigned to supervise the finished products used for an apartment complex (carpet, tile, wall surfaces, paint, etc.). This creates a focused area for a novice CM where the scope of information is contained. There will, of course, need to be clarification, verification, and sometimes correction of details, which requires communication with the architect, owner, and constructors. But much of the work is focused on *seeing* that the work is

performed according to plans and specifications. That is, being on site and observing that a crew has the materials necessary and installs them correctly according to the specifications and the plans. That grounds a project engineer (a common entry-level CM position) in the materials and methods that are essential to successful construction projects and constrains the communication to a relatively limited number of stakeholders (just one subcontractor and crew, for example) around a finite set of information. As that CM's successful career progresses, she will expand the number of stakeholders and the number of systems within her purview, which will remove her from some of the very practical, physical, construction details (e.g. has the correct adhesive been used to install tiles in this space) and shift her to overseeing more processes and products that need to be managed at a more strategic and executive level. This is not a radical notion, but rather a familiar trajectory that is followed in many industries, including construction.

Observation 4

The job of the more experienced CM is often to direct the novice project engineer to where a specific communication problem might be found. One observation from the field was made during a weekly meeting of the entire project management staff of about 20 individuals. Attendees included the project manager, assistant project managers, superintendent, assistant superintendent, field engineers, project engineers, and administrators. Instead of leading the meeting, the project manager had assigned an assistant project manager to establish the agenda and lead the meeting. The project manager used his time to listen to the discussion, observe the attendees, and only provide direction and commentary when needed. However, it was the assistant project manager who verified previous assignments and made new assignments. Ultimately, the more experienced CM identified where there were information and communication problems and dispatched a less-experienced CM to sort it out.

Overall, these observations were critical for the development of the suggested theoretical framework including use of skills within the career advancement and to identify the transition and prolonged advancement periods on the career trajectory. The results presented in the following section delve into the details of the framework with the validation process.

Results

An early study on the link between communication skills and career advancement found that an overwhelming level of businesses demand "effective communication skills" in higher-level positions (Peterson, 1997). Argenti et al. (1998) concluded that "executives who have invested time and effort in learning strategic communication approaches clearly have what we call a communication advantage." However, this same study found that few executives received communication training in their formal education. From the field observations conducted in this study, certain trends, themes, and behaviors emerged regarding the natural career trajectory of CMs. The resulting theoretical model was conceived, which represents the career trajectory for construction managers as it relates to their ability to develop and use effective communication (as shown in Figure 1).

In Figure 1, The X-axis represents time in a CM's career, while the Y-axis represents the degree to which a skill is used. The solid black line represents an individual's development and use of communication skills in the workplace. Communication skills (in this case) are inclusive of interpersonal skills and leadership skills. The solid gray line represents an individual's use of technical skills in the workplace. Technical skills for a construction manager include, for example, the ability to estimate costs, schedule activities, process submittals, inspect subcontractor status, process material deliveries, etc. As experience is gained over the years in the career, there is a natural shifting

towards the use of, or reliance on communication skills over technical skills. The upper dashed black line represents an individual’s ability to accelerate their career pathway through early development and application of their communication skills. Notice, the use of technical skills does not change in this case, but the intersection, or cross-over period begins earlier in the CM’s career. This represents the transitional period for a CM from more technical-focused activities to more managerial-focused activities. The darker shaded area represents the typical transition period for many construction managers’ careers. The transition period can generally span two or three years, and this generally occurs after five to eight years of experience. The lower, dashed black line represents an individual who does not assert themselves to gain more advanced communication skills. Note that the intersection of career transition occurs a bit later than usual (shown in lighter shading).

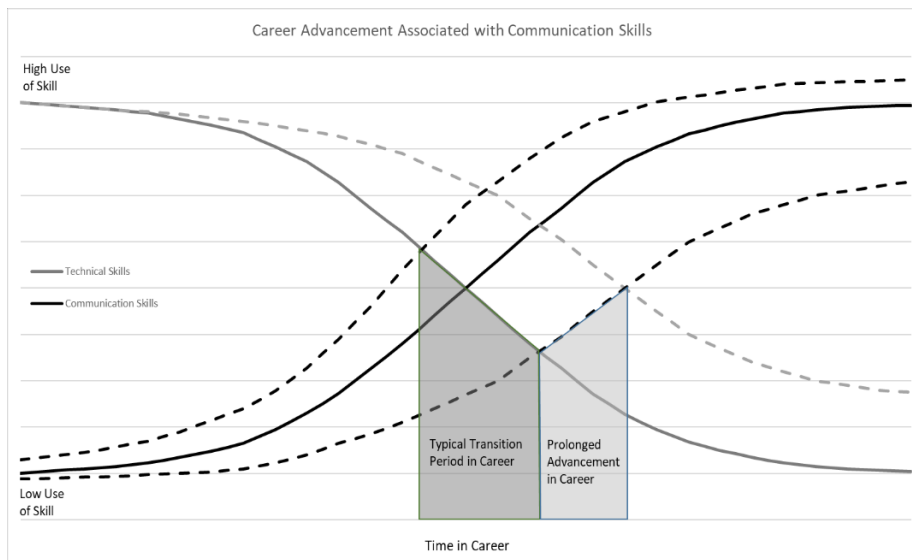


Figure 1: Career Advancement Associated with Communication Skills

The dashed gray line (beginning near the top left of the figure) represents an individual’s reliance on their technical skills—or perhaps their propensity toward the more technical aspects of construction managers. This disposition is not a reflection of their inability to develop more advanced communication skills; merely their choice or preference to focus their respective careers on the technical aspects of the job. Notice the intersection of this line with the dashed gray line and the solid black line. This transition still occurs within the typical transition period of construction managers, but the transition is slightly delayed. To be clear: the theory is not an assertion that technical skills diminish or decrease during a CM’s career. To the contrary, technical knowledge and understanding consistently increase as an individual expands their portfolio of projects and solves a variety of technical challenges throughout their career. Our argument is that for early-career construction managers, their day-to-day focus is really on technically focused activities, and the development and deployment of communication skills as they gain experience afford an opportunity for career advancement, accelerating the trajectory. In contrast, advancement is delayed or deferred when the individual has not asserted themselves to gain the necessary communication skills and focuses more heavily on the technical skills to accomplish their work. As an example, one construction manager (CM 12) described his experience in the following way: “In my career I initially focused on my technical skills. That was partly my personality, partly I needed to, and lastly that was the company tradition for new graduates. Communication was not stressed at college and not at my employer. However, I learned early on that more ‘seasoned’ employees had the ability to sell projects and

communicate in writing and verbally advanced in their career and responsibilities. It took years, but I can now say I am comfortable and confident in my communication abilities.”

The theory, therefore, is that career transition and advancement is dependent upon one’s ability and assertion to gain and use communication skills more effectively. That is not to say that career advancement is exclusively dependent upon communication skills development, as other skills will continue to influence career development (e.g. financial management, organizational development, leadership, strategy, and so forth). However, we might reasonably claim that communication skills—either the lack thereof or the attainment of such—will have a more direct impact on career advancement than most any other skills because the success of all those other skills is in part dependent on effective communication.

Validating the Theoretical Model

A central premise of this research was that the career trajectory of a CM is affected by their ability to apply communication skills in their work and that there is a natural, yet necessary shift to the greater use of communication skills as their career progresses. With any qualitative study, there exists the concern about validating such a claim (Pyett, 2003; Creswell & Miller, 2000). As such, we sought to validate the theory through a method referred to as peer debriefing (Lincoln & Guba, 1985). The average years of experience of the 53 participants was 17.86 years working in the construction industry. Of the 53 peer responses, 13 (24.5%) were female – which is a better female representation than the industry (approximately 14%) as a whole (Sedey, 2018). Each peer was provided a detailed description of the theory presented, accompanied with Figure 1. The peers were asked to read and reflect on the theory and provide answers to three questions:

1. On a scale of 0 to 10, to what degree do you agree with this proposed theory, (0 being strongly disagree and 10 being strongly agree)?
2. Explain your answer, or your experience in your own career advancement, and how communication skills relate to your career advancement.
3. How long have you been in your career as a Construction Manager?

The mean score to question 1, was 8.72, with a standard deviation of 1.32; the lowest score being a 4 and the highest score a 10. The median score was 9 and the mode was 10. To proactively address concern as to whether early career respondents held sufficient experience to truly validate career trajectory theories, the participants were then stratified by years of experience. Using the median years of experience to create the two strata, the mean was recalculated as well as a T-test – to determine if there was statistical difference between the mean scores of early versus late-career CM’s. Table 1 provides the results of the T-test. Because the sample size was an odd number, the T-test was a two-sample test assuming unequal variances.

Table 1: *Results of T-test*

	Strata One: Less than 16 yrs	Strata Two: 16 yrs or more
Mean Score	8.461	8.963
Variance	1.618	1.787
T Stat	-1.399	
P (T<=t) one tail	0.0839	
P (T,=t) two tail	0.168	

These scores provided a measurable validation of the theory from a relatively small sampling of construction managers. Additionally, the P-value in the t-test did not indicate statistical significance between the mean scores of the two strata – thus giving greater credence to the responses of early career CM's. The peer's qualitative responses provide even greater meaning and perspective to the theory and this study. The following sampling of responses provide the perspectives and experiences of these CM's. Each of these participants provided written approval for the use of their comments. One early-career CM related her perspective to a recent experience, wherein a senior project manager was replaced on a project. The new project manager espoused a managerial style of, "over communication", which initially was not well received by the group. However, "... looking back at the project now, the over-communication mind set drastically changed the way our team worked together. (CM1)"

CM4 supported the theory (score of 8) stating that, "communication skills are a dominant factor in career advancement. However, not all employees want to be leaders, or "the boss". Should the employee want to remain in a specific position, or department, technical skills may supersede the need for communication skills. Assuming the person is looking for career advancement, communication skills are the dominant traits for advancement." In a similar statement, CM5 (score of 10) suggested that the need for motivation will drive the CM to gain the necessary communication skills. "...early in one's career, construction managers can quickly see in their day-to-day jobs how well senior managers communicate, and quickly realize the importance of good communication - if they want to advance and advance quickly. This becomes the motivation they need."

CM8, who scored the theory at a 5, argued that, "...my career advanced faster because of my ability to combine technical with technology, but it also plateaued faster because of the technology stigma in construction. Communication skills are critical to advancement, but there must first be a respected level of technical experience." Further clarification was gained from CM11 (score of 9), who stressed that, "...we do not lose the ability to use certain skills, we just don't happen to use these technical skills as much. Once we acquire and use these [technical skills] over the years, they become second nature and used as resources for our communication..."

CM46, a 23-year veteran who scored the theory at 10, emphasized a significant need to focus on written communication skills, "Communication is a somewhat vague term these days as we usually, quickly relate it to verbal communication. However, our industry has had a major shift over the last few years to a point where written communication has become more important than ever. "

CM35 considered the dynamics of both technical and interpersonal skills, and the need to keep both relevant, "What I have found is my technical skills serve me very well when I am an individual contributor. But the larger my responsibilities became in my career, the more it required a team effort, and in those instances, communication is paramount to success."

Finally, CM17, with 11 years of experience, scored the theory at 10. She described her experience of growth from early career to project management as closely aligned with the description accompanying Figure 1. "Although it is crucial to learn the technical aspects of construction early in your career, and learn how to build, learning, developing and improving communication skills cannot be forgotten. It took me a long time to realize that I couldn't just get by with my technical knowledge if I wanted to be in a project management role. I started to realize that the higher you progress through your career, the less you deal with the aspects of constructing a building. Everything becomes about managing and dealing with people, which all relates back to communication."

These examples are just a sampling of the responses received but represent well the group's reaction and validation of the theory presented in this paper. These peer observations, along with the interviews and observations from the field led us to make the following conclusions.

Conclusion

In the early stages of a construction manager's career, the reliance and focus on technical skills is purposeful and necessary on the part of the supervisor and the employee. From the interviews in the field, a number of project managers commented on the need for field and office engineers to have significant time applying their technical skills on the jobsite. As these entry-level CM's gain experience and observe more seasoned construction managers, their abilities to make effective and intuitive decisions improves. While they continue to rely upon and develop their technical skills, the day-to-day application of those skills decreases as their increased experience leads to the expanded demands of more advanced positions within the project team or organization. These demands rely heavily upon the accelerated development and deployment of communication skills. That development currently depends heavily upon the talents and initiative of the individual; little emphasis is given within the construction curriculum or in early-career training to communication in an intentional and explicit way. Nevertheless, the CM must consciously and actively choose to engage in developing those skills to maximize the benefits of the career trajectory. CM's who cannot or do not avail themselves of opportunities to improve their communication skills will find themselves on the lower trajectory (see Figure 1). That is not to be interpreted that a CM on the lower trajectory will not achieve the career level of a superintendent or project manager (senior-level CM positions), but rather, the individual that asserts themselves to gain and effectively use communication skills can accelerate and extend their career trajectory.

There does seem to be some influence from the supervisor on the development of communication skills. Given a project manager or superintendent that fosters appropriate opportunities, and provides the necessary patience with the field engineer, may provide that field engineer the advantage. But ultimately it is up to the field engineer, and assistant PM/Super to take full advantage of those opportunities and assert themselves to learn.

An interesting observation from the study was that perspectives of communication varied depending on the experience of the individual in their respective careers. Younger, or early-career individuals perceive communication in general terms, as a means to receive and provide instruction. Several field engineers voiced their concern that their immediate supervisors were not explicit in their direction. As a result, they found it difficult to know exactly what was expected from them. More experienced CMs on the other noted that they often seek to promote those field engineers that assert themselves in asking, seeking, and researching answers. "The field engineer that does their homework before asking what to do", one project manager noted, "is often better equipped to answer their own question, and they often are asking for clarification rather than direction."

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