

Measuring Complex Achievement: The Construction Management Internship

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The internship experience is generally looked upon as the most important single part of a construction management student's professional preparation. Internships should be a competency-based program with pre-stated instructional goals and outcome performance behaviors that are designed to specifically represent the competencies necessary for the construction manager to function efficiently. Construction management students are to be accountable for attaining a given level of proficiency in achieving specific competencies that are identified. This article provides a format and objectives for a working portfolio that each construction management student will cooperatively develop with their college supervisor and on site directing manager.

Keywords: internship, field experiences, cooperative education, apprenticeship.

Introduction

The internship experience is conceptualized as a partnership between construction industry work sites and the university's academic environment. Each partner brings a special and necessary area of expertise to the partnership, thus enabling on site directing managers to assist and direct the construction management student to progress from novice to productive construction manager. One of the key difficulties with internships lies with the measurement of the complex achievements that senior construction management students must demonstrate during an internship class. Using the three phase model of teaching as outlined by Jacobsen in "*Methods for Teaching: A Skills Approach*" the internship class should follow three phases. These phases are: planning phase, implementing phase, and the evaluating phase. The three phases are interrelated, sequential and require the professor to plan a learning experience for their students by first planning what they need for their students to know, understand, and perform. Next actually implement those plans, and then finally evaluate the success of the planned internship activities. The program outlined in this article represent a new concept in construction management internships and evaluation.

Two Way Partnerships For Internship

The internship is designed as a field based demonstration of the course work competencies, which have been identified as necessary for successful construction management. A construction management internship course for successful completion requires the student to demonstrate they are a "competent" construction manager. A "competent" construction manager is defined by the Construction Industry and University's Construction Management programs as a manager who

can effectively coordinate activities, people, subcontractors, materials, and financial aspects of a project to bring about a company's continued growth and performance.

The internship experience is conceptualized as a partnership between the construction industry and University's Construction Management Programs. The primary partners include work-based partners and University based partners. Work based partners' work closely with the college representatives to place interns. A needed component is a list of companies representing a variety of construction operations from which a potential intern must seek employment. This variety allows a construction management student to select a company that reflects his intended career path. Each company must supply a directing manager who has successful managerial experiences, workplace expertise, strong interpersonal skills, communication skills, and willing to be a coach and mentor for the intern. The internship team consists of intern, directing manager and college supervisor. While the directing manager plays a critical role in the internship process on a daily basis, the college supervisor must provide open communications lines to the intern as well as coach and mentor. The intern as the third member of the internship team must be a construction management student in good standing, completed most of their coursework (be in the last two semesters prior to graduation) and meet all other requirements. Interns are inexperienced managers who are learning to refine their pedagogical skills under the guidance of an experienced field based manager and college supervisor.

Roles, Responsibilities and Expectations

Three individuals comprise the internship team: The intern, the directing manager, and the college supervisor. Internship experience assists construction management students to develop competence in their professional practice, learn to apply knowledge, develop a set of professional understanding, learn to examine their practice, learn from their experience while seeking to meet the needs of the construction profession.

Interns are expected to:

1. Demonstrate their commitment to their company and their learning;
2. Know the areas they perform;
3. Assume the professional roles and responsibilities linked with the directing manager;
4. Systematically think about their practice and learn from their experiences;
5. Be responsible for managing and assessing their work;
6. Be responsible for demonstrating the outcomes, professional skills and objectives of the internship experience.

Directing Managers are expected to:

1. Work as a collaborative team member on the internship team;
2. Plan the intern experience and assess performance;
3. To suggest ways for strengthening intern's competencies;
4. Clearly communicate their expectations;
5. Orient intern to work place, staff, and organization;

6. Regularly confer with the intern;
7. Provide ongoing documentation on intern's demonstration of essential competencies.

College Supervisor are expected to:

1. Observe or review intern work;
2. Review and complete intern plan;
3. Develop timelines for intern activities;
4. Maintain intern's profile;
5. Provide feedback, two seminars, and record outcomes.

Evaluation and Statement of Specific Competencies

Competencies represent the specific learning intents of the internship program. Each competency is considered to be a specific instructional goal or learning outcome that has value and is considered to be a long-range end worth achieving. The following information relates to methods for measuring complex achievement in an internship.

Evaluation & Grade Reporting

(The following data is excerpts from an internship packet- to conclusion)

Oral Expression

Students are expected to communicate orally in a coherent and logical manner using Standard English in all internship experiences.

Written Expression

On all written work, students are expected to express themselves clearly and correctly, using Standard English. Papers, which contain excessive errors (grammatical or typographical), will not be accepted for evaluation purposes.

Grade Determination

All eight specific interim objectives in this module are stated at the minimum level of competency expected of an undergraduate. Your final grade will be based upon the following guidelines:

1. Timely submission/performance of all assigned and mutually agreed upon tasks.
2. Successful achievement/completion of all interim objectives listed.

Weekly Homework/ Internship Requirement:

At the end of each workweek, the intern is required to fax at least a one page typed abstract of the workweek activities and assignment. Each day's activity must be documented. Failure to do this weekly assignment will result in an incomplete or failing grade.

Final Paper Requirement:

By the last class meeting each intern will turn in a typed paper that clearly analysis the competencies and knowledge acquired. Paper quality is to be college level.

Statement of Specific Competencies

Competencies in the context used in this module represent the specific learning intents for which the module has been designed as a guideline to aid in learning achievement.

Each competency is considered to be a specific instructional goal or learning outcome that has value and is considered to be a long-range end worth achieving.

1. You will demonstrate your ability to plan projects effectively.
2. You will effectively manage projects, subcontractors, and contracts.
3. You will demonstrate your ability to organize and develop projects effectively.
4. You will effectively present construction management skills.
5. You will demonstrate effective verbal and nonverbal communication.
6. You will demonstrate your ability to estimate and schedule effectively.
7. You will relate to co-workers in a positive and constructive manner.
8. You will demonstrate professionalism.

Interim Objectives, Enabling Activities, and Learning Outcomes

In the previous section goals were described in general terms. In this section specific, observable behaviors are identified for each of the goals. These goals, together with the observable behaviors, are called Interim Objectives.

In addition to the interim objectives, activities designed to help you reach each one are included. These are termed Enabling Activities and Learning Resources. A list of suggested activities is included, but you are not required to complete each one. Your directing manager and college supervisor will identify the activities in which you are to participate and will discuss them with you.

Finally, a statement is made that describes how you will be evaluated. This is called the Evaluation Procedure.

The goals and interim objectives are described in the same sequence so that they may be cross-referenced. The Summative and Formative instruments used for observation of specific objectives/competencies are found in Appendix E.

Interim Objective I

You will demonstrate your ability to plan projects effectively so when in an internship setting you will:

1. Develop a schedule (bar chart/CPM)
2. Organize a two/three week activity schedule for a project.

Enabling Activities & Learning Resources:

1. Plan a project/estimate.
2. Conference with directing manager to assess learner status.

Evaluation Procedures:

Success in achieving this objective will be measured by the quality of your schedule/plan as determined by your Directing Manager and College Supervisor.

Interim Objective II

You will effectively manage projects, subcontractors, and contracts so when in an internship setting, you will:

1. Organize a project file.
2. Review all contracts.
3. Understand scope of work.
4. Understand contracts.

Enabling Activities & Learning Resources:

1. Know the approved subcontractors for a project.
2. Take responsibility for reviewing and managing contracts.
3. Take responsibility for managing project files.

Interim Objective III

You will demonstrate your ability to organize and develop projects effectively so when in an internship setting, you will:

1. Demonstrate effective use of time.
2. Use review techniques throughout the project.
3. Demonstrate adaptation of each project's needs.

Enabling Activities & Learning Resources:

1. Select/develop material and maintain a file.
2. Observe works by others.

Evaluation Procedures:

Success in achieving this objective will be measured by the quality of your performance on specific tasks as determined by your directing manager and college supervisor.

Interim Objective IV

1. Demonstrate ability to effectively present construction management skills so when in an internship setting, you will:
2. Develop effective understanding of condition and consequence relationships in construction management.

Enabling Activities & Learning Resources:

1. Demonstrate appropriate and varied practice and application opportunities for managing construction projects.
2. Demonstrate use of management skills in appropriately working with a project or company.

Evaluation Procedures:

Success in achieving the quality of your construction management skills as determined by your directing manager and college supervisor.

Interim Objective V

Effectively using verbal and nonverbal communication. You will demonstrate effective verbal and nonverbal communication so when in an internship setting, you will:

1. Demonstrate clear and accurate verbal discourse.
2. Demonstrate effective content, delivery, organization, and language usage while speaking.
3. Demonstrate appropriate body language, which reflects positive and enthusiastic feelings.
4. Use a well-modulated, clear and distinct voice with no significant speech defects.
5. Communicate information a given subject in a coherent, logical manner, using Standard English in oral and written form.
6. Demonstrate the ability to comprehend and interpret a message after listening.
7. Use vocabularies appropriate for the situation.
8. Use logical and coherent written languages appropriate for the target audience.

Enabling Activities & Learning Resources:

1. Practice uses of voice, which shows variation in tone, volume, pitch, and inflection.
2. Practice using body language, which reflects positive and enthusiastic feelings.
3. Practice using clear and accurate verbal discourse.

Evaluation Procedures:

Success in achieving this objective will be measured by the quality of your verbal and nonverbal communication as determined by your directing manager and college supervisor.

Interim Objective VI

Demonstrate ability to estimate and schedule effectively so when in an internship setting, you will:

1. Demonstrate effective use of estimating and scheduling techniques.

Enabling Activities & Learning Resources:

1. Use of computer in quantity take offs.
2. Prepare a computer schedule for a project.

Evaluation Procedures:

Success in achieving this objective will be measured by the quality of your estimate and schedule as determined by your directing manager and college supervisor.

Interim Objective VII

Establishing positive interpersonal relationships to co-workers so when in an internship setting, you will:

1. Understand patterns of social and personal relationships in a work environment.
2. Identify and demonstrate behaviors, which reflect a feeling for the dignity and worth of others, including those from ethnic, cultural, linguistic, and economic groups other than your own.

Enabling Activities & Learning Resources:

1. Exhibit positive attitudes and behaviors toward all workers and clients.
2. Establish rapport with Directing Manager, co-workers, and administration.
3. Demonstrate acceptance of co-workers regardless of cultural, intellectual, physical, emotional, or social differences.
4. Share with others and value their responses.
5. Demonstrate flexibility and positive response to the unexpected.

6. Display cooperative attitude.

Evaluation Procedures:

Success in achieving this objective will be measured by the quality of your relationships as observed formally and informally by your Directing Manager and your College Supervisor.

Interim Objective VIII

Demonstrating professionalism is a critical component as interns make the transition from the role of student to that of manager. You will demonstrate professionalism so when in an internship setting, you will:

1. Participate in all work-related activities expected of the directing manager.
2. Attend all internship seminars.
3. Express positive responses to the internship experience and related activities.
4. Demonstrate positive attitudes toward co-workers, clients, subcontractors, administrators, and work responsibilities.
5. Accept constructive criticism in a positive manner.
6. Dress in a manner appropriate to the work environment.
7. Contribute to the achievement of work goals by following policy and procedures.
8. Demonstrate a willingness to discuss and address important issues.

Enabling Activities & Learning Resources:

1. Attend internship orientation and debriefing meeting.
2. Attend all internship seminars.
3. Submit required forms and information to college supervisor and directing manager.
4. Attend meetings and in-service opportunities.
5. Demonstrate positive and effective behaviors in conferences with other professionals.
6. Join a professional organization and provide service in some capacity.
7. Read relevant professional publications.
8. Develop a plan for the on-going evaluation of your own work performance. List objectives for self-improvement on the Intern Professional Plan.

Evaluation Procedures:

Success in achieving this objective will be measured by the quality of your participation in professional activities as determined by your directing manager and college supervisor.

Categories of Internship Hours

Time Log

Documents record of hours spent in internship, by categories: Observing, Participating and Out-of-Class Activities.

Observation

1. Observe directing professor.
2. Observe resource manager.
3. Observe management team you are assigned.
4. Observe other management teams, if possible.
5. Observe other interns, if possible.
6. Observe all activities.
7. Observe administrative and management procedures and related construction paradigm.

Participation

1. Check duties.
2. File materials.
3. Duplicate materials.
4. Supervise tasks that are assigned to you.
5. Research and study the role of the manager in communicating with others.
6. Develop, when appropriate, a plan for using the construction resources of your company.
7. Learn cohort's names.
8. Give assistance on special topics.
9. Supervise and perform assigned tasks.
10. Work with all assigned management team members.

Managing

1. Perform estimating assignments.
2. Perform scheduling assignments.
3. Plan, implement and evaluate paper flow on a project.
4. Supervise assigned projects, tasks, etc.
5. Estimate and create project files.
6. Monitor all assigned tasks.
7. Supervise/work on a project.
8. Maintain reports.
9. Take responsibility for the management of small, medium and large groups in formal and informal settings.
10. Use a variety of management techniques such as behavior modification, reality theory, congruent communication, positive self-concept development, etc.

Self-Analysis of Work Effort

1. Analyze the effectiveness of your verbal and non-verbal communication.
2. Develop a plan for ongoing evaluation of your own performance.

Outside Work Activities

1. Read professional materials and publications.
2. Attend in-service workshops.
3. Attend company meetings as allowed.
4. Attend all internship seminars.
5. Join a professional organization and provide service in some capacity.
6. Attend/participate in extra-curricular activities.
7. Attend social events.
8. Stay physically fit.

Professional Development Plan

Helping interns to begin construction management duties is a challenging task. There is no "one plan" for all interns. However, a period of 14 weeks of full-time working is suggested. During the internship period the directing supervisor will be assessing the strengths and weaknesses of the intern's abilities. Frequent feedback through this period will assist in professional growth as well as keeping the final evaluation from being a total surprise.

One must remember the student internship is learning to be a manager. An intern is expected to make some mistakes. The directing supervisor is in a position to help the intern learn from these mistakes and develop strategies to prevent them in the future. It is generally recognized that one of the most effective methods of assessing changes in behavior is through self-evaluation. Interns must be encouraged to look at themselves objectively and to assess their assets and liabilities. Conferences, both formal and informal, provide the vehicle to accomplish this self-analysis.

Day-to-day informal discussions provide valuable feedback in checking over plans and materials, evaluating together the intern's progress as well as reviewing plans for the next day.

It is advisable for the directing manager and intern to set aside a predetermined time each week (about one hour per week) to evaluate the week in total; plan for the week ahead; discuss working techniques and materials; to discuss specific problems which have occurred; to assess areas of construction management which have been successful and others needing definite improvement; and to identify successes.

To summarize, internship activities can be grouped into four categories:

Observation - Participation - Planning - Evaluation/Feedback

Conclusion

The development of a construction management internship course requires the development of goals, competencies, an implementation method and an evaluation system. This article supplies the rationale and basic methodology for a true internship course resulting in the ultimate capstone course.

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Appendix

Operational Definitions:

Competencies – sub-goals contained with the mission statement, which represent the specific learning intent to be achieved by construction management students completing the internship.

Enabling Activities and Learning Resources – refers to the strategies and material and human resources necessary to enable students to achieve a desired competency.

Evaluation and Grade Reporting – refers to a statement of the over-all criteria that will be used in determining student achievement with reference to grades.

Intern Objective – represents an extension of the competency statements to include the behavior by performances, criteria, and conditions necessary for the construction manager to succeed in the construction industry environment.

Post Assessment Statement – statements used to clarify means by which construction management students can demonstrate achievement of interim objectives.

Directing Manager – excellent managers who have assumed the role of boss, coach, and mentor. This manager assumes the primary responsibility of day-to-day activities of the construction management student.

College Supervisor – the university professor assigned responsibility for supervising the internship experience.