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Defining and Fostering Professional Dispositions in Students

DEVELOPING THE 21ST
CENTURY WORKFORCE

Dr. Dana Ingalsbe
Dr. Jess Godbey
Mr. Terry Marbut

Jacksonville State University
Jacksonville, Alabama



The Association of
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Management, and
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Introduction

In a modern workforce, where challenging workloads demand employees to deliver their best work in shrinking timeframes, professional attitudes and behaviors are more necessary than ever. Although the term “professionalism” is commonly heard in the workplace as well as on the college campus, what exactly does it mean to possess a professional disposition?

The concept of professionalism is largely recognized but not typically defined in engineering education. The “I’ll know it when I see it” approach is the prevalent attitude toward professionalism. Likewise, a lack of professionalism may be immediately evident, yet can present a challenge for someone to define it. Because of this, faculty in engineering-related fields are met with the challenge of fostering attitudes and behaviors in their students that are amorphous and subjective.

This white paper will review the current literature to examine how professional dispositions are defined in engineering and other professional disciplines, propose a definition for professional dispositions, and then offer suggestions for fostering these professional dispositions in students.

What is Professional Disposition?

A disposition or attitude will affect how an individual conducts oneself in various situations. It follows that if a student possesses a professional disposition, he or she will behave in a manner of professionalism in the workplace. However, while this is simply put, it is not easy to evaluate one’s disposition. Dispositions are amorphous qualities, making their measurement subject to interpretation and subjectivity by the evaluator. The first step in identifying a professional disposition lies in defining it. The current literature lacks a definition as to what constitutes a professional disposition, although many components of a professional disposition are addressed.

Multiple studies have examined student attitudes towards academic dishonesty, which would indicate students’ dispositions towards unethical conduct. Carpenter et al (2006) administered a comprehensive survey of over 600 engineering students in an effort to determine attitudes towards and instances of cheating and unethical behavior in this population. It was found 96.3% of students knowingly engaged in acts of cheating (as defined by the students themselves) at least once. The authors also stated that a student’s definition of cheating affects his or her behavior.

In 1996, ABET proposed new criteria, EC-2000, a set of student learning outcomes created to prepare students for the modern engineering workforce. One of the outcomes comprising the EC-2000 criteria was 3F, "An understanding of professional and ethical responsibility". Besterfield-Sacre et al (2000) define this outcome as having four components: "(the) ability to make informed ethical choices, knowledge of professional codes of ethics, evaluates the ethical dimensions of professional practice, and demonstrates ethical behavior. The ability to recognize potential ethical dilemmas is emphasized, as is the relationship between cost and schedule pressures and increased risk." Despite this definition, the focus here seemed to be upon ethics rather than the professional disposition as a whole. Hence, an opportunity is presented to define what constitutes professional dispositions in engineering-related fields.

Of the few articles published regarding professionalism in engineering education, Nguyen (1998) surveyed people both in industry and in academia, and found that the three most critical attitudes an engineering professional should possess are: competence (the ability to carry out a task and do the work), integrity (trust and loyalty to the organization and to colleagues), and commitment (dedication to the organization). While one may argue that competence is not an attitude but rather a skill set, integrity and commitment are attitudes held in high esteem by both professionals in engineering, as well as those in academia. Nyguen stated: "Industry places more importance on competence and integrity....which suggests an industry view that the ideal engineer must be capable of doing the work and committed to the organisation, as well as practising his/her profession with integrity."

Johansson and Ohlsson (1992) approached the teaching of professionalism in a software engineering program by using the concept of a "commitment culture". The authors defined a commitment culture as "a working atmosphere built on voluntarily taking responsibility". During the final semesters of the program, students enrolled in three successive project-based courses. The courses increased in duration, and required greater responsibilities for project completion with each successive course. Students were graded not only for the quality of the project completed, but more so for the students' ability and willingness to negotiate with the customer (the instructor) regarding his or her delivery requirements. The completion of the

projects required the students to negotiate internally with their teammates regarding workloads as well as externally with the expectations of the customer. The role playing involved in the projects taught the students the importance of taking active and voluntary responsibility, as well as maintaining an open atmosphere of communication.

Looking at teacher education programs, Cargill et al (2009) described a program implemented to help students identify and strengthen professional education dispositions, as well as assess and assist students who do not display professional educational dispositions. Aligning student behaviors with the definition of professional dispositions as given by the National Council for Accreditation of Teacher Education (NCATE), teacher candidates were evaluated in the classroom by faculty for the following: attendance/punctuality, timeliness with assignments, appearance/grooming, poise, attitude, initiative, responsiveness to feedback, and rapport. Faculty were encouraged to look closer at student dispositions in methods classes, practicums, and internships. Upon observing negative dispositions in their classrooms, faculty were encouraged to communicate with the student and begin remediation. If a student persisted in failing to display appropriate professional dispositions, he or she was required to complete a formal remediation regimen called PRIME (Process for Remediating Identified Marginal Education) Candidate Program. The authors emphasized that the responsibility for identifying, fostering, and remediating students' professional behaviors lies with faculty members. They stated that faculty members are more likely to report negative behaviors when they are confident that their reporting will be acted upon.

Professional Disposition: Defining the Term

In analyzing the results of the literature review, it would seem that a professional disposition is a compilation of several elements. These elements fall under the following general categories: ethics, competence, integrity, and commitment. Given that competence is the range of technical skills a student acquires during his or her undergraduate studies, the authors have narrowed the categories of elements comprising a professional disposition to the following three: ethics, integrity, and

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commitment. These categories are not completely distinct from one another; they are interrelated. For example, ethical behavior is related to one's integrity. Similarly, having a high degree of integrity can be the result of one being committed to his or her values.



Figure 1. Categories of elements comprising a professional disposition

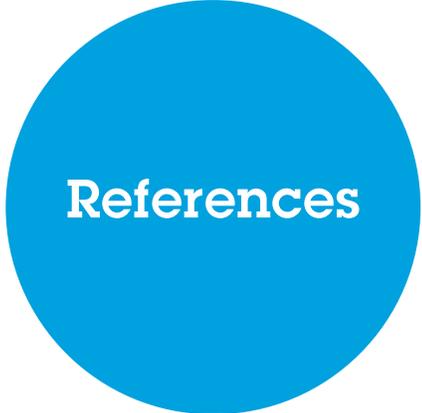
The literature also indicates that the majority of the responsibility in defining professional dispositions for students and then fostering professional attitudes in students lies with faculty members and workplace mentors. The literature points toward the importance of practical learning opportunities, such as practicums and internships, where students can learn the importance of professional dispositions and behaviors first-hand.

Fostering Professional Dispositions in Students

When it comes to developing an awareness of professional dispositions in students and in newly-employed professionals, there are many avenues for faculty and mentors to explore. Based on preliminary, unpublished research that we are conducting, there are areas where students and employers disagree as to what constitutes a professional disposition or behavior. This presents an opportunity for educators to address a gap in judgment such that students who enter the workforce are aware that the behaviors they may see as acceptable could be viewed as unprofessional in the workplace. Students should be equipped to be proactively sensitive to the workforce culture they are entering, knowing what behaviors and attitudes may be interpreted as unprofessional. Some ideas for accomplishing this end include classroom discussions or workshops concerning professionalism, modeling of professional dispositions by faculty and workplace mentors, and the implementation of elements of professional dispositions into coursework.

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Professional associations, such as ATMAE, may consider the creation of resources for faculty and industry members to enable better identification and development of professional dispositions in those whom they teach and mentor. Finally, the implementation of elements of professional dispositions into accreditation outcomes or the creation of a “code of professionalism” (or similar charter) may be a future consideration for accrediting bodies such as ATMAE.



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Dr. Dana Ingalsbe, Jacksonville State University, (256) 782-5229
ingalsbe@jsu.edu

Dr. Jess Godbey, Jacksonville State University, (256) 782-5080
jgodbey@jsu.edu

Mr. Terry Marbut, Jacksonville State University, (256) 782-5034
tmarbut@jsu.edu



Author information