

Vocation and Occupation: An Innovative Course in the Physical Sciences to Help Students Link Personality with Career Development¹

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Abstract

There is mounting pressure for higher education to provide career training that moves beyond technical knowledge into the commonly referred to “soft skills” of professional development. Although most would argue that universities are not in the business of providing specific job training, sufficient room likely exists in most curricula to include vocational development without losing disciplinary strength. To meet this challenge, a new course in career development was launched in 2003 within the Department of Soil Science at the University of Wisconsin-Madison. This required course of all soils majors couples traditional job search skills with vocational identification in an effort to help students transition into satisfying careers. Annual summative assessments have consistently led the department to where this course now attracts students outside the major. Five years of personality data gathered in the course revealed that student temperament distributions were consistent with the general U.S. population, but unlike those typically found within the physical sciences. These data were also related to teaching effectiveness and job search skills. Although this course garnered much success among students, pedagogical challenges that jeopardize its broader implementation are discussed.

Introduction

Career satisfaction characterizes the aspirations of most college students today and underpins the expectations of most parents paying the bill. This concern is commonly articulated as “what job can I get with this major,” and often answered by declining enrollment in degree programs that do not carry the perception of ready employment beyond college (Studley, 2004). Degrees in agriculture and the environment exemplify this trend despite government predictions that these fields will grow at rates exceeding the national average through the year 2014 (U.S. Department of Labor, 2008). However, regardless of the degree, the average college graduate can still expect to engage in over a dozen job changes during their active work life (Kanfer et al., 2001; Saks, 2006).

These trends inevitably bring anxiety for graduates navigating volatile career environments. Indeed, career indecision ranks as a major source of anxiety among most college graduates today (Esters, 2007). Various assessment tools such as the Career Decision Scale (CDS) have identified a multidimensional list of factors to explain career indecision (Osipow, 1987; Esters, 2007). Although not without its critics (Laplante et al., 1994), the CDS highlights two barriers to choosing a satisfying career: an inability to reconcile how one's personal characteristics match career options, and difficulty in choosing among a number of viable career alternatives (Kelly and Lee, 2002). Knowing oneself relative to employment opportunities underlies both these issues. For example, a study of 310 freshman and seniors in the College of Agriculture at Iowa State University revealed that students who neglected self-appraisal were more likely to experience greater career indecision and engage less in career exploration (Esters, 2007).

The careers of today also demand that graduates combine “hard” disciplinary knowledge with “soft” people skills (Robinson et al., 2007; Shivpuri and Kim, 2004). Although students typically undervalue this reality (Dunne and Rawlins, 2000), employers consistently seek self-motivated graduates who can solve multidisciplinary problems, work in teams, make decisions, and manage conflict (Schmidt, 1999; Berle, 2007). Addressing this issue within academia arguably begins with allowing students time for guided self-inquiry. Indeed, personality traits are known to influence vocational choice and help explain job turnover (Boudreau et al., 2001), such that recruiters commonly use personality to determine employability (Cole et al., 2004). Thus undergraduate curricula are now challenged to include professional development with disciplinary knowledge, often a daunting task for universities already taxed with shrinking resources and increased industry demands (Looney, 2004; Martin et al., 2000).

Identifying characteristics that increase employability has been an active area of research for some time (Robinson et al., 2007; Tziner et al., 2004; Schmidt et al., 1979). Early studies largely focus on

¹I am forever grateful to Dr. John Norman for allowing me to take part in the planning and implementation of this course. This course would not be nearly as successful without Dr. Norman's experience, insight, and tremendous teaching ability. It was a delight to teach alongside him. I also thank three anonymous reviewers for their comments on this manuscript.

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situational variables (e.g. labor pressures, economics) (Hom and Griffith, 1995). However many now point to personality and self-efficacy (i.e. confidence to reach a defined goal) as proximate controls over job search, performance, and career longevity (Moynihan et al., 2003; Robinson, 2000). A recent study of 225 university graduates found job search self-efficacy to predict employment success and the ability to resist early job offers and wait for better fits (Saks, 2006). Moreover, this study noted a difference between confidence in identifying viable career opportunities and confidence in interviewing skills, suggesting that graduates strong in both would garner the greatest employment success. Therefore the need for undergraduates to identify an occupational pursuit by coupling traditional job search skills (e.g. resume writing) with self-exploration (e.g. personality assessment) has never been greater.

This call from those both within and outside academia to formally teach career development has appeared for some time (Saks, 2006). Indeed, many employers blame higher education for the low employability of college graduates (Robinson et al., 2007; Siebert et al., 2002). The Department of Soil Science at the University of Wisconsin - Madison has answered this call by developing a non-traditional, required course (hereafter referred to as Soils 428) linking vocation and occupation. The educational literature has highlighted innovative course offerings including integrative capstones (Zimmerman, 1997), collaborative laboratories (Balster et al., 2001), and revitalized introductory classes (Donnermeyer et al., 2005). However, few discuss courses that combine personality assessment and job search skills to improve the ability of graduates to secure rewarding careers and reduce the occupational hopscotch commonly experienced after graduation.

Purpose and Objectives

The purpose of this study was to assess the effectiveness of a new course (Soils 428) within the physical sciences that couples career development with vocational identification as a possible example to build similar innovations at other institutions. Specific objectives were to: 1) describe the need, context, and design of Soils 428; 2) assess the demography and effectiveness of Soils 428; 3) use Soils 428 as a research opportunity to examine trends in personality type relative to the general population, academia, and job search skills (Conrad et al., 2007); 4) identify pedagogic challenges to implementing a non-traditional course in vocational identification at a predominantly research-focused university.

Methods and Course Description

Objective 1. Describe the need, context, and design of Soils 428.

Course Need and Context: Soils 428 grew out of a one-credit seminar that began in the early 1980's

within the Department of Soil Science at the University of Wisconsin–Madison. It was initially constructed as a one hour per week career development course with traditional exercises in resume writing, job interviewing, and communication. All graduating seniors within the department were required to take the course; the course was not marketed outside the department. Enrollment varied annually, as it tracked the undergraduate population moving through the Department.

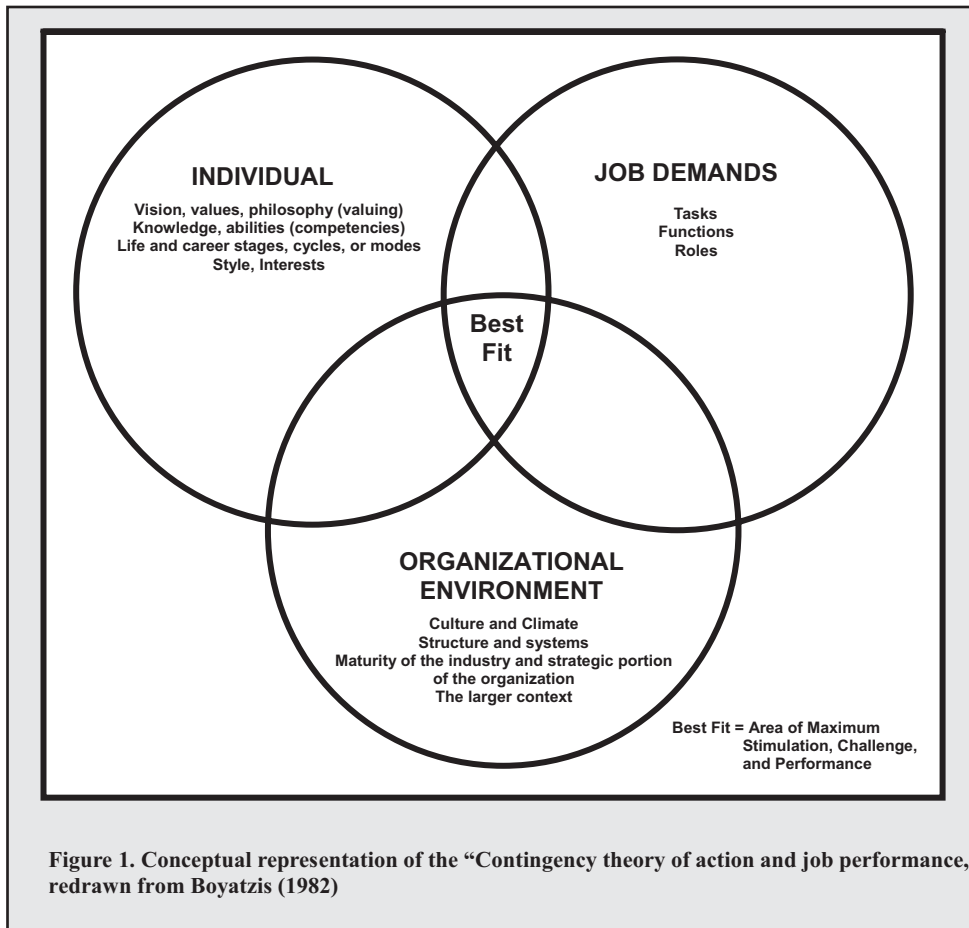
Over time it became clear that the senior seminar had outlived its effectiveness. By their senior year, most students had presented multiple PowerPoint® presentations, already crafted working resumes, or had interviewed for internships. At the same time, the instructors were losing interest in maintaining an outdated course. Consequently, in 2002, the department pushed for its revision out of which grew the course described here, “Soils 428 Senior Seminar: Finding Your Vocation.”

Soils 428 was built on a premise articulated in one of its required texts: “The secret of career satisfaction lies in doing what you enjoy most” (Tieger and Barron-Tieger, 2001, p. 5). Although statements like this have become cliché, they do not diminish the undeniable truth that when occupation meets vocation, work becomes a life-long endeavor in contrast to simply a task one does to maintain an income. While traditional university courses build intellectual vitality, Soils 428 was envisaged to nurture aspects of one's character that help determine ideal career choice and job satisfaction.

Contextually, Soils 428 relies on a “best fit” career model that conceptually integrates job demands (e.g. tasks, functions, and roles), the organizational environment (e.g. culture and structure), and the vision, values, and competencies of the individual (Boyatzis 1982; Figure 1). Higher education does a reasonable job of building disciplinary competencies to meet the functional demands of many careers, and clearly, a better understanding of the workplace helps improve career satisfaction. However, most career counselors agree that in addition to these areas, an integration between personality type and occupation plays a proximate role in career satisfaction and performance (Tziner et al., 2004). Soils 428 provided students an opportunity for this vocational development (i.e. “Individual” circle in Figure 1) without usurping curriculum space allocated to disciplinary education.

In general, the course objectives centered on the difference between occupation and vocation. We define occupation as a place of employment and vocation as a person's life work. Thus, the goal of Soils 428 is not to necessarily help employ students, as to provide additional tools to formalize individual definitions of career satisfaction via vocational identification. Ultimately, by combining exercises that hone self-inquiry and interpersonal skills with traditional job search training (e.g. resume writing),

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we hoped to initiate self-motivated, life-long pursuits of vocation. Specifically, this learner-centered approach emphasizes four course objectives: 1) use self-assessment tools that allow students to explore their vocational truth; 2) motivate students to contemplate what they find and apply this self-efficacy to occupational pursuits; 3) provide a safe, engaging learning community that nurtures honest self-reflection, fosters interpersonal interactions, and encourages spirited discussion; 4) require students to reach outside the university into the working world for vocational insights from persons whom they respect;

To meet these objectives, students are expected to maintain a high level of professionalism and respect for the learning community. For example, because personality assessments are included in this course, students can participate anonymously without penalty.

Course Design: The pedagogical design of this course relies heavily on in-class discussion and collaborative learning. Only four to five formal lectures are given during the semester with the remaining focused on in-class participation and collaborative learning. Lecturing was intentionally minimized because it did not resonate beyond the classroom. Thus, learning constructs ranging from student-led demonstrations to instructor participa-

tion in personality assessment are used to encourage discussion and engagement.

Soils 428 meets for 50 minutes once a week during a semester, which yields approximately 15 in-class meetings. Although a required course for all graduating seniors in Soil Science, it is marketed to underclassman in and outside the department. While the specific course design continues to evolve, it has maintained six core requirements that count for a percentage of the final grade: Resume Writing and Peer Assessment (10%), Personality Assessment (10%), Job Interviewing and Mock Interviews (10%), Vocational Interviews and Presentations (30%), Journaling (25%), and Participation (15%). Each requirement is imbedded in the course, however the order and intensity in which they are covered is largely controlled by the number

and interests of a particular class. Because Soils 428 relies on in-class discussion and meets only once per week, attendance is mandatory such that each unexcused absence results in a one-letter grade reduction.

Besides attendance, the only mandatory activity required throughout the semester is journaling. Journaling is viewed as a beneficial activity for personal growth, as well as an approach to extend the course material beyond in-class meetings. Journal topics are either pre-determined by the instructor or left open for students to reflect on a particular week's topic. The journals are considered personal property of the students; entries are read only upon request. Each journal is looked at superficially and given credit for two full pages of text. Obviously, this cursory grading structure does not ensure journaling on material related to the course. However, we assumed that students will journal respectfully; most students often wrote well beyond the two-page minimum.

Two textbooks are required for this course: “Please Understand Me: Character and Temperament Types” by Keirse and Bates (1984) and “Do What You Are: Discover the Perfect Career for You through the Secrets of Personality Type” by Tieger and Barron-Tieger (2001). The first text focuses on personality type including a user-friendly

assessment to determine individual tendencies. The second text builds on the tenets that career satisfaction “lies in doing what you enjoy most” and by concentrating on “who you are, the rest will fall into place” (Tieger and Barron-Tieger, 2001, p. 5). Although the assessments provided in these texts build on the well-respected, time-tested instrument of the Myers-Briggs Personality Indicator®, we recognize, as do the students, that the main objective is to demonstrate the benefit of these tools relative to vocational identification.

Job Search Skills and Personality

Assessment: In Soils 428, career development is combined with personality assessment in an effort to integrate occupation and vocation, recognizing that skills such as resume writing and job interviewing are critical to job search success. Although the majority of students enter the course with a working resume, many of these are weak or incomplete. Thus, following a class on resume writing, students are required to submit a revised resume for peer review. During the following class, each resume (identity removed) is distributed to each student along with 5-10 additional resumes randomly included from years past. The students are then given one minute to quantitatively rate the information (1-5) and one minute to rate the impression (1-5) that each resume conveys (Hellmich, B., personal communication). These ratings are tabulated, written on the board, and then discussed. These data aggregate surprisingly well among personality type and expert opinion from the job search literature. Because recruiters frequently form impressions from resumes that go beyond traditional biodata, this exercise is also used to explore how personality can be conveyed through resume construction (Brown and Campion, 1994).

After resume improvements are made, students explore the job interview. This topic is taught by Dr. Hellmich, Assistant Dean of Human Ecology at the University of Wisconsin and a nationally recognized consultant in the art of interviewing and resume review. An in-class discussion on interviewing serves as the preamble to mock interviews held in a formal conference room. Each student participates in an intensive 20-minute mock interview where they answer pre-designed questions delivered by Dr. Hellmich and the course instructors. Students receive immediate feedback from instructors and classmates who viewed the interview. The student is then asked to answer the same questions again, although this time incorporating the feedback from instructors and peers. In every case, students experience the power of practice, as their improvement is obvious to everyone in the room. Because students consistently identify the interview module as a course highlight, we allow ample time for each student to complete the experience.

Personality assessment is used to compliment these career development skills. Personality typing is

not new (Felder, 1996), but has seen much iteration and many rebirths since its early appearance in early Greek and Roman philosophy (Keirse, 1998). Although some have disputed the role of personality in shaping career outcome, it has grown in popularity, most arguably during the 1950's when personality typing was made mainstream by Kathryn Briggs and Isabel Myers with a 166-item questionnaire (self-report) otherwise known as the MBTI® (Myers and Myers, 1993). This assessment tool not only provided empirical evidence for personality typing, but has also withstood the test of time, as it is widely used by millions worldwide. Indeed, many Fortune 500 companies routinely use personality typing to improve job performance, build effective teams, and train consultants (Felder, 1996; Tieger and Barron-Tieger, 2001). Personality assessments are used in Soils 428 to characterize strengths and weaknesses that often direct motivations, behaviors, and energies toward a fulfilling career path (Tieger and Barron-Tieger, 2001).

Because the administration and interpretation of the MBTI® requires a fee-based certification, we use a similarly constructed assessment developed by psychologist Dr. David Keirse. Dr. Keirse, in his book “Please Understand Me II”, identifies sixteen personality types representing combinations of four dichotomous elements of personality preference (Keirse and Bates, 1984). These types build one of four temperaments, namely, the “traditionalists” (SJ's), the “experiencers” (SP's), the “idealists” (NF's), and the “conceptualizers” (NT's). Temperament is one's ingrained nature that drives inclinations (Keirse, 1998). This non-judgmental self-assessment tool is scored and interpreted using the information presented in the textbooks. As intended by the authors, all personality types are presented as equally effective and thus enhanced by different occupations, yet tending to group into distinct career paths (Tieger and Barron-Tieger, 2001). In other words, students understand that there is no one best combination of personality traits because every preference has its particular strengths and weaknesses.

After scoring the assessments, each student can share their personality type for in-class discussion only if all students agree to sharing. Although students can anonymously opt out of this activity, in the six years teaching this course no student has declined to take the assessment or share their results. On the contrary, students are typically eager to hear how their types sort with the general population and their peers. To ensure a safe learning environment, we stress that each personality type is not a discrete designation, but rather a combination of preferences. For example, one may test for a preference for extroversion, although that does not exclude introverted tendencies. Because personality typing uses continuous scales of assessment, no one personality type is deemed better than another. This plasticity

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provides each student with a nonjudgmental assessment of their compatibility relative to a variety of occupational pursuits.

Vocational Interviews and Presentations:

The course concludes with informal presentations of two interviews conducted by each student. The interviews must consist of one family member and one person outside their family. Each individual must be respected by the student for finding or struggling with vocational success. In the final weeks of the course each student informally presents what they learned in addition to a two-page written summary of the interviews.

Assessment and Evaluation: Summative assessments are administered at the midpoint and end of each semester. Students are asked to provide anonymous written feedback during the final 20 minutes of a mid-semester class period. The end of the semester assessment uses a departmental evaluation consisting of a quantitative four-point rating system relative to six questions including course effectiveness, the skill of the instructor(s), and recommendation to peers. Students are also encouraged to provide additional qualitative comments related to the course and their quantitative rankings. The semester-end assessments are also completed anonymously and administered without instructors present. Results are collected and tabulated by the department's administrative assistant. The instructors receive the results the beginning of the following semester. In addition to course assessments, data from five years of personality typing were tabulated to meet objective two of this study.

neering. First-day surveys revealed that one-third of students had taken formal steps (e.g. crafted a resume) toward achieving their career goals.

Five years of semester-end summative assessments revealed that students overwhelmingly valued the course and marked it as one they would recommend to their peers (Table 1). Moreover, the course consistently led the department in every categorical ranking. Students ranked the instructors knowledge and commitment to teach greatest among the assessment questions. Although above average, the lowest ranking occurred in stimulation of thought; this category also had the largest standard deviation among questions.

The vocational interviews were consistently the most rewarding feature of each semester, as they provided an effective capstone to the course. All students reported being deeply changed by this experience and often admitted it being the first time they had spoken to a family member about this subject. The most consistent themes that emerged from this exercise were that it is common to not know one's vocational path and that opportunities often present themselves when least expected. Students learned that knowing oneself empowers them to know when to either pursue unexpected opportunities or let them pass. These consistent "you're not alone" messages heard in the interviews had a profound impact on self-efficacy, greater than could be achieved in a traditional lecture format.

Soils 428 is not the only model for teaching career development however. The School of Engineering at Vanderbilt University has developed a stand-alone teaching module that uses personality indicators to teach interpersonal skills (Sharp, 2004). The

Results and Discussion

Objective 2. Assess the demography and effectiveness of Soils 428.

Student numbers in Soils 428 largely tracked enrollment patterns for the department. From 2003 to 2007, enrollment ranged from six to 22 students per semester, yielding a total of 57 students that successfully completed the course. Of these, 68% were male and 33% were female. The majority were majoring in soil science (30), while the remainder were distributed among majors in waste management, dairy science, botany, theater, language arts, education, and engi-

Table 1. Quantitative and qualitative summative assessments from 2003 through 2007 of Soils 428 in the Department of Soil Science, University of Wisconsin-Madison. Numbers are listed as mean rankings from 1 to 4, with 4 equating to the highest mark. All assessments were anonymous and completed with instructors absent from the classroom.

Quantitative Assessment	2003 enrl 8	2004 enrl 23	2005 enrl 14	2006 enrl 6	2007 enrl 7	Mean	STD
Knowledge of Subject	3.7	3.9	3.6	4.0	3.9	3.8	0.20
Teaching Ability	3.8	3.7	3.1	3.8	4.0	3.6	0.34
Commitment to teaching	4.0	3.8	3.6	4.0	4.0	3.9	0.16
Stimulates thought/ interest	3.8	3.6	3.0	3.3	3.9	3.4	0.37
Relevance/fairness of Grading	4.0	3.8	3.5	3.7	4.0	3.7	0.20
Recommend the course to others	3.7	3.6	3.2	3.5	4.0	3.5	0.29
Overall score	3.8	3.8	3.4	3.7	4.0	3.7	0.24

Qualitative Student Assessments: All years combined

- *Most common positive feedback:*

Overall, I really enjoyed the class; Interesting material; Liked the laid back approach (informal, friendly); Enjoyed the journal writing; Moved at good pace; Interesting; Liked the discussions; Liked the course setup and pace; Liked the friendly, loose atmosphere; Stimulated thought and curiosity; Allowed me to learn things I didn't know about myself; Enjoyed the personal evaluation the best.

- *Most common "needs improvement" feedback:*

I would do three things to improve it: 1) Begin with a personal presentation relevant to personality type, 2) expand the course to 2-3 meetings per week, 3) add more structure to the course by following its goals closer; Need more direction on where course is moving; More information on interviews; More student involvement; Class a little too serious at times; Find stuff a little honky at times; Need to get students to participate more; Class too serious at times; Need more direction with class projects such as the interview. Should be offered earlier in college, say at the freshman level.

University of Glamorgan, U.K., developed a collaborative series of workshops and seminars to help students with career placement and planning (Barthorpe and Hall, 2000). Although focused on job search skills, the University of Kentucky developed a six-week, non-credit seminar that has also garnered much success (Stephens et al., 1992). And similar innovations can be found at Grinnell College, Colorado College and Stanford University (Studley, 2004). Adding to this respected and growing list, the uniqueness of Soils 428 lies in its coupling of job placement skills and vocational identification within a traditional physical sciences curriculum at a research-focused university.

Objective 3: Use Soils 428 as a research opportunity to examine trends in personality type relative to the general population, academia, and job search skills.

Personality and Academia: The distribution among temperaments found in Soils 428 adds evidence to the tendency for academia to select for certain personality types (Capretz, 2003), often incongruent with the dominant form of instruction within the physical sciences (Cooper and Miller, 1991). The physical sciences typically attract and retain teachers with a rational NT temperament, particularly within research-focused institutions (Rowe, 1978; Tharp, 1993). This temperament broadly describes results-oriented pragmatists who carry high expectations of themselves and others, always seeking to understand, predict, and explain the natural world (Keirsey and Bates, 1984). Paradoxically, academia provides an environment for the NT teacher to flourish (particularly the introverted NT) (Tryon, 2005), yet most students tend to be distributed among the SJ and NF types (Rowe, 1978). Thus, applying the data in Table 2 to our typical 70-student enrollment in introductory soil science, only 14 individuals would likely possess the NT temperament; this number would lower to eight if reflective of the general U.S. population (Keirsey and Bates, 1984). Therefore, if the NT instructor teaches the way they prefer to learn, which most temperaments tend to do (Capretz, 2003), they may be connecting with a learning style found in less than one-eighth of the students in these introductory science courses. If this speculation holds, it may be

Table 2. Summary of temperament types in Soils 428 from 2003 through 2007 relative to the general population and a sample of school teachers. Temperament distributions for the general U.S. population were reproduced from Kiersey and Bates (1984) and Tieger and Barron-Tieger (2001). Personality distributions for school teachers (discipline unspecified) and their typical length of service were reproduced from Keirsey and Bates (1984).

Temperaments	Class Average in Soils 428 from 2003-2007 (% plus SD)	General U.S. Population Average (%)	School Teachers and Relative Length of Service (%)	Generally Favored Teaching Areas
Extroverts	60 (5.6)	75	ND	
Introverts	40 (1.3)	25	ND	
Tradionalists (SJ)	49 (3.9)	38 – 40	56 Long	Agriculture; Clerical; Business; Sports; Social Science; History; Geography
Idealists (NF)	24 (2.0)	12 – 15	32 Long	Humanities; Social Sciences; Theatre; Music; Foreign Languages; Speech; Theology
Conceptualizers (NT)	20 (1.5)	12 – 15	8 Medium	Philosophy; Science; Technology; Communications; Mathematics; Linguistics
Experiencer (SP)	7 (0.8)	38 – 40	4 Short	Arts; Crafts; Sports; Recreation; Drama; Music

advantageous to either vary the teaching styles or personality types of those who teach these introductory feeder courses if they are to attract students to the sciences.

The variation in personality type among students also provided insight into the general character of the Department of Soil Science at the University of Wisconsin-Madison. The range in student temperaments concurred with U.S. teachers ranked across a variety of disciplines (Keirsey and Bates, 1984), however differed from distributions among students within the physical sciences (Table 2). The majority of students in Soils 428 were of the SJ temperament followed in order by NF and NT; the SP temperament ranked a distant fourth, not surprising given their general disinterest in higher education (Melear, 1990; Tharp, 1993). In addition, an extroversion preference was found in 60% of students, which mirrored trends in the general population (Bradway, 1964), but again contrasted with data from the physical sciences where introverts have been shown to dominate (McCauley, 1977; Tharp, 1993). These results suggest that the Department of Soil Science has selected for students with temperaments reflective of the general population, although unrepresentative of those common to the physical sciences. These results may be common to majors (e.g. Soil Science) that typically mix basic and applied science.

Personality and Job Search Skills: The ability to integrate personality type in resume construction and job interviews has been shown to improve employability and job satisfaction (Dindoff, 1999; Kirkwood and Ralston, 1999). In a study of 244 job recruiters, personality traits (e.g. conscientious, extroversion) inferred from resume biodata were shown to correlate with applicant employability for

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the variety of job types (Cole et al., 2004). Similarly, many studies have demonstrated a positive relationship between self-efficacy and interview performance (Saks, 2006), both of which are rooted in vocational identification. Indeed, it has been argued that a primary goal of the job interview is to measure interpersonal skills and self-efficacy (Arvey and Campion, 1982). Thus, in Soils 428, students are encouraged to project their vocational identity through resumes and interviewing using word choice, resume design, and highlighting qualifications that convey personality preferences.

Although too small for statistical inference, some intriguing trends emerged when assessing student resumes relative to the personality type of the author and their peer reviewers (i.e. mock employer). Resumes authored by the SJ temperament consistently ranked highest by all other temperament types for both information and impression. The NF temperament type appeared to value impression over the informational quality of resumes, while the SJ temperament appeared to focus on resume content. Resumes authored by introverts received a higher rating for both information and impression regardless of the reviewer's personality preference. In terms of impression, reviewers with a judging (J) preference tended to prefer resumes authored by J types, while reviewers with a perceiving (P) preference tended to prefer resumes authored by the P type. Because each student was invested (authorship and peer review) in the resume exercise, discussions were typically spirited and provided many teachable moments to assess the importance of linking vocation and occupation. Given these apparent trends, the influence of personality type on resume construction and review warrants further study.

Objective 4: Identify pedagogic challenges to implementing a non-traditional course in vocational identification at a predominantly research-focused university.

A pedagogical challenge to teaching Soils 428 originates from the variety in personality types that take this course. When coupling the quantitative and qualitative feedback from the summative assessments (Table 1), students varied on their degree of intellectual stimulation. Although an undervaluing of interpersonal skills among students is not new (Dunne and Rawlins 2000), it was clear that some needed more course structure. This need likely reflects differences in personality types among students, as others enjoyed the learner-paced nature of the course. Thus, striking an instructional balance between a completely structured format and a learner-led exchange of ideas continues to pose a pedagogical challenge to producing a consistently effective learning experience.

Despite the success of career development courses, academia often resists implementing these non-traditional course offerings. Thus, Morley (2001)

argued that most graduates spend little to no time developing the emotional intelligence and self-care needed to weather volatile and increasingly competitive job markets. Data from Soils 428 support this assertion, as the majority of students were surprised (and later grateful) to be given time to focus on career development. Conversely, many faculty colleagues expressed mild acceptance of this course provided it took minimal credit hours from the curriculum. This response is not uncommon among academics given the qualitative, often perceived "soft" skill-set underlying career development (Robinson et al., 2007), as well as the misconception that vocational training demands a disproportionate amount of time (Studley, 2004). However, if higher education is to address the concerns of employers seeking qualified graduates and help curb the growing rate of job dissatisfaction and turnover among graduates, barriers to implementing professional development within universities must be confronted. While the pedagogical challenges can be overcome, the misconception that vocational development will dilute a curriculum's disciplinary strength may stand as the greatest obstacle to the broader implementation of courses like Soils 428.

Summary

With increasingly volatile job markets and high rates of career turnover, there is a growing call from both inside and outside academia to provide career training that moves beyond technical knowledge into the commonly referred to "soft skills" of professional development. This manuscript describes a new one credit course (Soils 428) in the Department of Soil Science at the University of Wisconsin-Madison that integrates professional development with job search skills. Soils 428 comprises 15 weekly one-hour classes per semester built around traditional topics such as resume writing and job interviewing, as well as non-traditional exercises in personality typing and vocational identification. Five years of summative assessments consistently led the department and showed that students held an overwhelmingly positive view of this course from its relevance to recommendation to peers.

This course also embraced the tenet of teaching as research. Five years of personality assessments collected in the course were examined relative to the general population, academia, and in relation to job search skills. These data demonstrated that academia tends to select for a certain personality types and that interdisciplinary programs such as soil science may select for a student mix more representative of the general U.S. population relative to other physical sciences. These data also revealed a possible disconnect between science instructors and students likely found in introductory science courses. Concerning job search skills, the informational and impression quality of resumes was related to the temperament types of their authors and reviewers; the relation-

ships between personality and job search skills clearly warrant further research. In contrast, this variety in student personality types made for a pedagogical challenge in balancing between instructor and learner-led formats in course structure.

Adding to a growing list of career development courses around the country, the uniqueness of Soils 428 centers on its coupling between job placement skills and vocational identification within a traditional physical sciences curriculum at a research-focused university. Although students found this course to significantly change their approach to career search, the misconception that vocational development will dilute a curriculum's disciplinary strength may stand as the greatest obstacle to the broader implementation of courses like Soils 428.

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