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THE IMPACT OF EXPLICIT INSTRUCTION ABOUT THE NATURE OF PERSONAL LEARNING STYLE ON FIRST-YEAR STUDENTS’ PERCEPTIONS OF SUCCESSFUL LEARNING

David A. Nickles

Introduction

Across the ever-changing landscape of classroom instruction, students tend to react to each educational situation uniquely, adopting attitudes that create a comfort level for them in each class. As a captive audience in the dynamic learning environment we call mandatory education, students form sets of beliefs about schooling that affect the way they approach learning. These beliefs influence the decisions they make and approaches they take toward their acquisition of knowledge in the classroom. These beliefs also contribute to students’ development of self-efficacy and motivational constructs as learners.

By developing clusters of “situational” beliefs and accompanying attitudes toward learning, students often find themselves reacting to external forces (teachers, peers, social mores) in the classroom without taking into account the impact of their own personalities and beliefs that mark them as individuals with unique talents and preferred styles for learning. As Pajares (1992) noted, since situational beliefs form attitudes and attitudes influence actions, educational beliefs may play a pivotal role in how students acquire new knowledge and, more importantly, their interpretations of knowledge. Those attitudes shape students’ educational goals and influence the degree to which they rely on extrinsic or intrinsic motivators to become all they are capable of being as learners.

Studies have long indicated that becoming “formal” learners, that is, those who succeed in traditional Western academic schooling,
is a developmental process of self-actualization through fulfillment of a hierarchy of consciousness levels (Maslow, 1965). The framework for this study draws parallels between the Concerns Based Adoption Model (Hord, 1987) and Maslow’s hierarchy. Students who engage in personal explorations of consciousness as social beings, coupled with advancement to higher levels of concern about learning, leads to learners who “listen to their own voices” and take responsibility for learning (Hall, 1974; Maslow, 1965; Roberts & Maslow, 1970).

Developmentally, however, many students may not be ready to examine their belief systems or explore their own personality traits until they have begun the transition from adolescence into adulthood. Consequently, at the time students enter college, it would seem prudent for them to begin this reflective examination to develop understanding about how the educational perspectives (beliefs and attitudes) they have developed over time contribute to making them who they are as learners. With such recognition students may then be better prepared to use that knowledge to attain greater academic success.

Unfortunately for most first-year students entering a new learning landscape, the first semester of college is traumatic and typically does not provide support for the levels of reflection necessary to begin this introspection. Amidst all of the chaos of settling into university life, students seldom have time to consider “Who am I as a learner?” Often they are away from personal support structures for the first time and find taking responsibility for their successes as university students a daunting task. They must quickly learn to negotiate through the physical campus. Immersed in a new system of bureaucracy, they attempt to deal with conflicting course schedules and finding ways to drag themselves to late night and early morning classes, all the while holding the expectation that their new found “freedom” is supposed to be emancipating. However, having the time, support, and structure to get to know oneself and how one learns, could be one of the most important tasks a new university student undertakes to ensure future academic success.

Such a venue for this type of first-year student experience is a required orientation course, ProSeminar 100. ProSem is a one semester, four hour, weekly seminar. In ProSem students hear
presentations about campus life from representatives of various organizations, become familiar with the University Vision Statement, read and discuss topical issues, and spend significant time engaged in formal and informal reading and writing assignments. While a common set of course outcomes guides the development of course syllabi, each section instructor determines the specific approach to the content in his or her section.

Coming to understand who they are as learners helps students identify their strengths and weaknesses and better prepares them to accommodate and mitigate instruction that may not be compatible with their preferred approaches to learning. This action research project sought to identify the perceptions about successful learning held by young adults as they entered their first year of college. Through explicit instruction in learning theory and style, this study also examined any changes in perspectives about being successful learners that resulted from this new knowledge. It was the intention of this researcher to engage first-year students at California State University Monterey Bay (CSUMB) in studies to know themselves as learners in the hope that these understandings would better prepare them to complete the first year successfully. Instruction during ProSem was devoted to providing opportunities for students to become more familiar with their preferred approaches to interacting with others and the world around them (Myers-Briggs typology), and to identify their preferred styles for learning. By the end of the semester students produced papers that identified who they were as learners, their “Theory of Personal Learning.”

Theoretical Framework

This study is guided by an interpretive research orientation whereby education is considered a process and school as a lived experience. This framework reflects Ernst von Glaserfeld’s view that knowledge construction is individualistic and based on personal interpretation of one’s lived experiences, yet is influenced through social interactions (von Glaserfeld, 1993 cited in Geelan, 1997). A researcher grounded in the interpretive paradigm does not intend to test theory, set up an experiment, or measure anything as does one doing positivist
research, nor does the researcher’s perspective lie primarily in unmasking the social and power structures of schooling as in critical theory research (Patton, 1990; Merriam, 1998). Rather, the interpretive researcher intends to understand the meaning people have constructed about a phenomenon, how people make sense of their world, and the experiences related to a phenomenon.

Undergirding this research is the assumption that students who have participated in “formal” K-12 education are predisposed toward developing unique and highly personalized beliefs about learning which likely influence their actions and decision-making processes as learners. As such, students’ perceptions about their learning selves are central to their thinking about schooling. The myriad of beliefs surrounding learning that students develop are what Lortie (1975) referred to as “the apprenticeship of observation” that occurs during schooling. These beliefs include ideas about what teachers, teaching, and the learning environment look like and how students ought to behave in the classroom (Cole & Knowles, 1993). Central beliefs generally are held tightly, and are not likely to change, unless they are clearly articulated and then examined in light of alternative beliefs or knowledge. Even when this occurs, new knowledge must be perceived to be intelligible, plausible, and fruitful if that information has a chance to influence a change in well developed attitudes and beliefs (Posner, et al. 1982; Hewson, 1996). This project intended to provide such opportunities for examination by the study participants through their ProSem course. The course content is described in detail below.

Methods

Course Content

The “learning theory” content of the course was comprised of several components. During the first week of classes students were given instruction and practice in concept mapping (Novak & Gowin, 1985). Students’ prior knowledge about c-mapping, or “webbing,” was elicited and practice c-maps with a central theme of “plants” were developed by pairs of students. A sequential process was used
to create these maps, starting with individual students brainstorming lists of words related to plants. Next, each pair of students compared and combined their lists, choosing the “best” 15 descriptors. Finally, each pair mapped their words using the central “plant” concept.

Following a review of the practice c-maps, each student brainstormed a new list of words that answered the prompt: “To be the best learner I can be, I need . . . .” These words were recorded on individual concept maps. Students volunteered to present and explain their maps, which were then collected by the instructor.

Students completed the Myers-Briggs Type Indicator early in the semester. The intent of this exercise was to help students learn how they prefer to focus their attention, acquire information, make decisions, and orient themselves toward the outer world (Myers & Myers, 1987). After completing the Indicator and reviewing their “profiles,” students grouped according to their preferred “types.” They discussed what characteristics they had in common as defined by the Myers-Briggs (M-B) Report Form. Students discussed their group’s findings and reported to the class.

Throughout the semester students were assigned in-class writings to help them reflect on self-efficacy and their knowledge of themselves as learners and students. They wrote about their successes as learners, the attitudes they held about learning and the sources of those attitudes, their study habits, and changes they felt could lead to improved academic success. Shorter writing assignments about the traits that described them as learners were incorporated into the students’ more structured writing assignments.

To help them better understand their personal learning styles, students were given a personal Learning Styles Inventory. Students determined their preferred learning styles from among the following: active or reflective; sensor or intuitor; visual or verbal; and sequential or global. Students compared these results to their M-B profiles. They tended to find these learning style descriptions more meaningful and closer in agreement with the students’ self perceptions as compared to the M-B. A follow-up article, Self-awareness: Knowing How You Learn (Carter & Kravits, 1996) was assigned. After reading and discussing the article, students’ previous writings were returned and they developed a first draft of their “Theory of Personal Learning” papers.
Direct instruction on Gardner’s (1993) Multiple Intelligences led students to identify examples from their lives that illustrated strengths in one or more intelligences. According to Gardner’s categories they self-sorted into groups based on what they viewed as their strongest areas of intelligence. Groups compared and contrasted Multiple Intelligences and Learning Styles. Discussion turned to how those learning styles manifest themselves in the classroom, what type of instruction students were most accustomed to, and how that pedagogy complemented or clashed with their personal styles.

The importance of the teacher to the study participants’ views of success was apparent after reviewing their first c-maps. However, those perceptions were founded on students’ understandings that their learning successes were dependent upon many external factors, one being “good teachers.” So, to stimulate the class to further consider the impact of pedagogy on a student’s preferred learning style, and to provide alternative conceptions of the role of teachers in the learning process, excerpts from *Approaches to Teaching* (Fenstermacher & Soltis, 1998) were assigned readings. Students reflected on the teaching behavior sketches of three very different, yet quite effective, teachers. They completed a reflective writing that addressed the following questions: “What makes each teacher different? What do they take to be the main goal of their teaching and the most important purpose of education? Do you find one more appealing than the others and a better fit with your own intuitions about good teaching?” After a class discussion regarding the students’ interpretations of these teaching styles, they incorporated this information into the next drafts of their “Theory of Learning” papers.

During the middle of the semester students completed a final survey: Skills, Aptitudes, and Personality (Strong, 1999). Students considered how their “measured” aptitudes in areas of reasoning, language, and abilities were related to Gardner’s multiple intelligences. They brainstormed new lists of words to describe themselves as learners and, paired with classmates they knew, compared their lists and received feedback from their partners about how well their self-perceptions matched with the perceptions of them by someone who knew them. Finally, they composed a written paper
describing the role that aptitudes and “intelligences” have in setting personal learning goals and adapting to changing pedagogical environments.

In preparation for completing the “Theory of Learning” paper, students reviewed the “phases of writing” and were instructed to compile their drafts and other writings into the final version. To bring closure to the learning theory content of ProSeminar, near the end of the semester students completed another concept map using the original prompt. Students compared their two maps in both structure and content, which provided additional narrative data for this study.

As a result of this course content, students developed increased recognition of the perspectives they held about themselves as learners, and they became able to articulate a theory of personal learning. This study found that students’ thinkings, motivations, intentions, and learning behaviors might potentially be changed as a result of taking such reflective self-examinations early in their college careers. The findings are elaborated in the next sections of this paper.

Participants and Data Collection

The 20 study participants were from two ProSeminar 100 sections. ProSem is a first semester course required of all matriculating students to California State University Monterey Bay. The dual purposes of the course are to provide an orientation to the university, both physically and philosophically, and to assist all students in the further development of their verbal and written communication skills.

The primary data sources supporting this research were concept mapping assignments. Concept mapping provides insights into how people learn and these insights can be used by teachers and others to help students think about course content (Novak & Gowin, 1985). For this study c-mapping techniques were adopted for research into the conceptual organization of ideas students hold about themselves as learners.

In order to explore students’ cognitive organization on the topic of learning, c-mapping tools were combined with student narratives and instructor notes. Subjects received instruction on how to draw
concept maps and were asked to draw maps two times – once before instruction and once after instruction, in the confines of their first semester of college. Maps were developed individually, reviewed by students in pairs during class for clarification, and submitted to the instructor.

After completing “practice maps,” students constructed a c-map in response to the research prompt: “To be the best learner I can be, I need . . . .” The construction of the research maps was a two-step process. First, each student brainstormed a personal list of descriptors in response to the prompt. Second, students organized their sets of descriptors into personal c-maps. Students worked individually to construct these maps during one class period.

After these first maps were collected, instruction on learning, including writing, discussion, reflection, surveying and profiling, was provided, interspersed throughout the semester with other course topics. (Instruction is described in the Course Content section above). Some of the products of instruction, including students’ written narratives and instructor notes, were collected as a secondary data source for this study.

During the last week of the semester students constructed a second c-map using the same prompt. Once these post-instruction c-maps were completed, students were presented with their original c-maps. At this time each student prepared a written explanation comparing the content and structure of his current c-map (post-) with his original c-map (pre-). Students were asked to identify orally and in writing what changes they made between their first and second maps and what accounted for those changes. These narratives were collected as an additional source of “cross check” data.

Data Analysis

Qualitative methods were employed to analyze the concept map data collected in this research study. Qualitative inquiry provides researchers a tool to “combine a variety of data gathering methods, and it allows for the generation of analysis grounded in recorded data” (Goodman, 1988, p. 122). This interpretive study was guided by the expectation that students’ concept map expressions about personal learning needs and styles would give the instructor/researcher insight
into students’ thinking and beliefs about what it means to be a successful learner, both before and after instruction on learning styles.

Using a constant comparative method of data analysis, patterns of students’ expressions can be viewed as an “ever-developing entity” by which themes emerge from the data (Glaser & Strauss, 1967, p. 32). Applying this method to c-map analysis, patterns of students’ ideas emerged from the descriptors they used, as well as from the organization or clustering of the descriptors into maps.

All descriptors were recorded in a database. A coding process to categorize the descriptors used in the maps was developed. Each cluster of descriptors students created on individual maps was coded first. Codes identifying these clusters were consolidated into categories of ideas (Miles & Huberman, 1994). Once coding of student clusters was completed and categories were assigned, the individual descriptors that were not clustered by students were grouped into conceptual clusters by the researcher and categorized. Segments of categorical data became tentative themes, with these emerging themes forming the basis of the research findings. Students’ written post-map explanations provided further evidence of their intended meanings, allowing the researcher to adjust categories and reconsider the tentative themes so that findings would be consistent within the sources of data.

In addition, but to a lesser degree, the structure of the students’ c-maps was examined. The number of individual descriptors, connections between and among descriptors, and the hierarchy of descriptors students used provided further, though limited, insight into students’ thinking. However, since students were not instructed in the nuances of making connections or the hierarchy of ideas in c-maps, these structural components may not be as indicative of student thinking as the actual descriptors used.

Triangulation is a “means of comparing and cross-checking the consistency of information derived at different times and by different means” (Patton, 1990, p. 467). Since consistency in patterns of data from different sources contribute to the overall credibility of findings, three different types of data were gathered as a cross check for this study. Both the early and late semester map sets were compared to one another. In addition, student reflective writings and researcher notes of classroom discussions and students’ comments were used to support the interpretation of c-map data.
Findings and Discussion

Modern research on personal needs development may have originated with Abraham Maslow’s seminal work: *Self Actualization and Beyond* (1965). He described the value of intrinsic over extrinsic learning as the ultimate educational goal. He contended that individuals move toward self-actualization through a developmental process that occurs in stages: survival, stability, sociability, expertise, and self; self-actualized people are most capable of intrinsic learning. His well-known hierarchy suggests that individuals move through stages of growth as personal needs are met.

The Concerns Based Adoption Model (CBAM), a corollary to Maslow’s theory, was developed to look at the process of adopting change within educational institutions by Hall (1974). This model further explored how individual readiness to grow and change follows predictable patterns based on a similar hierarchy, the seven stages of concern, one must satisfy to progress through the change process when adopting innovation.

These models suggest an understanding about how students become self-directed learners. This notion was pertinent to this study because the participants were undergoing change. This researcher postulated that the process of transitioning from a high school to college learning environment not only causes students to move through stages of concerns about the “innovation of transition,” but these concerns doubly impact entering first-year students since the process of becoming a self-actualized learner is an additional innovation expected of such students. Educators have acknowledged that when focused on the learner, CBAM, in conjunction with pedagogical strategies of active participation, face-to-face interactions, and support, can assist students in becoming self-motivated learners (Osborne, 1994). Thus, moving through a developmental process, from concerns about self and survival toward the impact of innovation (in this case, learning about learning) on self-actualization, may be a productive, albeit difficult, course of action for students of ProSeminar. It was clear from this study, however, that the cognitive organization of these students’ personal learning theories had changed as a result of the instruction provided.
Analysis of the concept mapping data obtained from this research project provided insight into the development of perceptions about being a learner held by twenty first-year students (17 females, 3 males) during their first semester at the California State University Monterey Bay in Fall 2000. As members of a required first-year orientation course, ProSeminar 100, each of the 20 participants constructed pre- and post-instruction c-maps revealing understandings about themselves as learners as they grappled with the significant changes accompanying the transition from high school to college life.

This study found that student thinking, motivation, intentions, and learning behaviors might potentially be changed as a result of engaging in a reflective, interactive approach to learning style and personality preferences instruction presented early in a college career. Specifically, the following assertions emerged from an analysis of the research:

- Students’ initial naïve understandings about learning were generally organized around external criteria.
- Students developed a “language of learning” that enhanced their abilities to articulate new understandings about their personalities and the possible effects personality and learning style has on them as learners.
- Students recognized and articulated the connections between their new understandings and their likelihood of being successful within certain instructional pedagogies.
- Students developed more sophisticated and complex understandings about themselves as learners and appeared to move the locus of responsibility for their success as learners from external to internal criteria.

Finding 1: Students’ initial naïve understandings about learning were generally organized around external criteria

Students’ initial perceptions about being successful learners were naïve, generally lacked sophistication, and tended to be dependent upon external criteria, clearly reflecting that the participants in this study were at the initial level of Maslow’s hierarchy (survival). The
significance of having basic, rudimentary needs met was perceived to be a prerequisite to their being successful learners. Many of the criteria students listed as necessary for success were related to having their basic level of personal needs met. For example, concerns about their immediate environment, like “being comfortable,” “having music” or “peace and quiet,” and “needing sleep” and “space” surfaced. Similarly, students had concerns about support they expected and hoped to receive. Support was defined as having appropriate resources – “paper, notebooks, and pens” and “books I can understand” – to “good teachers,” “help from family, friends” and “money.”

Two representative c-maps (Nicholas and Gemma) illustrate the simplicity of students’ thinking about being the best learners they could be as they entered college. They show that fulfillment of basic needs through external means was perceived to be their principal prerequisite for success. It is apparent from these two maps that each student’s initial locus of attention toward being a successful learner related to becoming more comfortable in his/her new surroundings.

Because so many students used descriptors that referred to environmental concerns, the category “environment” was employed in the process of constant comparative analysis. As indicated in Table 1, the highest percentages of descriptors were coded “environment.” Students’ selections of environmental descriptors, like
“comfort, quiet, encouragement and support, sleep, space,” and support descriptors like “money and time,” were indicative of their perceptions that the responsibility for academic success was external to them.

The environment category was followed closely by the categories: resources, personal needs, and various kinds of support. Less utilized were words that identified students’ personal learning characteristics: “focused (3), goals (3), enthusiasm (2), concentration (1), and will power (1),” or preferred styles of instruction, “hands-on (2), few lectures (1), fun course (1), and discussions (1).”

Table 1. Pre-Map Categories*

<table>
<thead>
<tr>
<th>Environment (13)</th>
<th>Personal traits (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional Resources (12)</td>
<td>Self-discipline (7)</td>
</tr>
<tr>
<td>Supportive (12)</td>
<td>Financial (4)</td>
</tr>
<tr>
<td>Personal (10)</td>
<td>Time (4)</td>
</tr>
<tr>
<td>Motivation (10)</td>
<td>Relevance (3)</td>
</tr>
<tr>
<td>Instruction/pedagogy (8)</td>
<td>Learning Style (2)</td>
</tr>
<tr>
<td>Teacher qualities (8)</td>
<td></td>
</tr>
</tbody>
</table>

*Number in parenthesis indicates the percentage of times a category was used to describe a word or cluster of words on the c-maps
Some maps (Kim and Katherine Pre-map) illustrated how students’ needs fell more in the realm of personal support and characteristics. Katherine’s map appears to show that acceptance by others and a positive, respectful learning environment where students are quiet and motivated are important features of her being a successful learner. Similarly, Kim expressed some of these same needs and adds some curriculum components – books at her level, interesting activities, and good teachers.
Use of the word “teacher,” in phrases like “good teacher” (see Kim’s map) or “friendly teachers,” occurred frequently, often attached to adjectives like “entertaining, interesting, enthusiastic.” Carissa’s use of “teacher” was also coupled with “knowledge,” and Teri connected “teacher” with “deadlines.” These maps imply that students see the role of teacher in a very traditional sense, that is, one who sets deadlines and imparts knowledge. Reading Carissa’s
words, she “needs knowledge” and that comes from “good teachers.” Teri, who may have lacked self-discipline, needs “great teachers” to set “deadlines” for her. In both cases, the criteria for being the best learners they can be was dependent upon external sources rather than coming from an intrinsic motivation.

Numerous students actually made explicit references to motivation and, in most instances the sources of motivation were external to the learners. Rebecca’s and Veronica’s maps included the descriptor “motivation” and illustrate how the term was used. While these students specifically used the term “motivation”, it was clear from all such references that students generally felt the need (and perhaps the expectation) to be inspired or to receive “help” to generate that motivation. Notice that they either reflect expressions of need for external criteria – outside guidance, help, prompts to make me think (Rebecca) – or, as Veronica’s map suggests, she needs (to be) “interested or inspired” to be “motivated” so she will become “focused” to be the best learner she can be.

Other students used motivational terms like “excitement,” “inspiration,” “informative books,” “interest in the subject,” and
“fun courses” as important components for their success. It seemed that they generally looked outside of themselves for meaningful involvement in learning – instructors who are entertaining, enthusiastic, or inspirational, coursework that is at their level, interesting topics and activities, and strong support from friends and peers.

Similarly, Becca described her dilemma about being motivated to learn in her narrative. Although focused on homework, her expression suggests a reliance on extrinsic motivation. Homework makes me very bored. I haven’t found homework that motivates or excites me yet. I do believe that if I apply myself to something I can learn anything. When I think about my self-image I want to change it because I’m not a very motivated person. If the teacher is involving me, that makes learning interesting. I believe I could get my ability to learn back if I was just motivated. Becca

Interestingly, no students mentioned being motivated by “small class sizes” in their maps, although that was frequently given as a reason for choosing to attend the institution.
Perhaps because education has always been something these students perceived was “done to” or “for” them, they entered college ready to “receive” their education rather than being willing and engaged participants in a process of self-actualization and looking inward for the self-motivation to learn.

**Pre-Map Structures**

As alluded to in comments about Veronica’s map, the descriptors students typically used in creating their first maps followed linguistically from the prompt: “To be the best learner I can be I need . . . .” For example, the descriptors: “time,” “motivation,” and “input,” as well as numerous terms describing “personal” or “environmental” concerns, fit the response to the prompt “I need.” Julia’s map illustrated how literally most students interpreted the prompt.

Although most students were new to c-mapping, and instruction on how to structure a c-map was limited, maps produced were surprisingly uniform in structure. Typical maps took two forms. A simple map, like Gretchen’s, contained the central idea (usually the prompt or the word “me”) and mostly single, first level branches from the central idea. Adding complexity to a map generally consisted of one or two additional levels of branching or linking.
Becca’s map, as did Julia’s, illustrated these second and third level branching structures.

One way to compare map pre- and post-structures is to count the number and type of branches. In pre-maps students used 118 first, 108 second, and 29 third level descriptors on their 20 maps. Post-maps contained 115 first, 108 second, and 29 third level descriptors. Based on the numbers of terms used at each level, there does not appear to be a significant difference between the pre- and post-instruction maps. Even when the number of distinctly different con-
cepts between the pre- and post-maps is examined, the number of unique first level concepts remains fairly constant. However, while the numerical difference is negligible, the focus, quality, and depth of thinking from first to second maps changed considerably. This change was revealed when the content and structure of the post-instruction c-maps were examined.

*Post-Map Structures*

Following instruction on learning styles, personality preferences, multiple intelligences, and teaching styles, students constructed a second set of c-maps near the end of the semester. Even though students were given the same prompt as for the first c-maps, the number of categories used to code the post-maps decreased from 13 to 9, despite adding one new category: Multiple Intelligences. Five categories used initially (financial, personal needs, relevance to content, resources, and time) were not needed to code the post-maps. Table 2 compares the percentage of times the pre- and post-instruction category codes were used.

Shifts in student concerns are apparent from the tabular data. Issues of students’ concerns about basic environmental needs significantly decreased. This could be attributed to getting used to their

<table>
<thead>
<tr>
<th>Category</th>
<th>% uses (post-)</th>
<th>% uses [pre-]</th>
</tr>
</thead>
<tbody>
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<td>(4)</td>
<td>[13]</td>
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<td>[12]</td>
</tr>
<tr>
<td>Support</td>
<td>(2)</td>
<td>[12]</td>
</tr>
<tr>
<td>Personal needs</td>
<td>(0)</td>
<td>[10]</td>
</tr>
<tr>
<td>Motivation</td>
<td>(2)</td>
<td>[10]</td>
</tr>
<tr>
<td>Instruction/pedagogy</td>
<td>(22)</td>
<td>[8]</td>
</tr>
<tr>
<td>Teacher qualities</td>
<td>(3)</td>
<td>[8]</td>
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<td>Personal traits</td>
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<td>[7]</td>
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<tr>
<td>Financial</td>
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<td>(4)</td>
<td>[n/a]</td>
</tr>
</tbody>
</table>
new environment, feeling more “at home” in their new surroundings. Just as striking however, was the decrease in perceived need for financial and human support structures like teachers, family, and peers. The sharp reduction in terms coded “motivation,” coupled with the increase in the number of codes related to knowledge of self (personal traits and learning styles) indicated that student focus shifted from extrinsic to intrinsic motivation. Students appeared to be moving toward self-actualization as learners.

One explanation for this change could be that students had a new language with which to interpret their understandings of themselves as learners. Students appeared to embrace this new language and the new knowledge about themselves.

Finding 2: Students developed a “language of learning” that enhanced their abilities to articulate new understandings about their personalities and the possible effects personality and learning style has on them as learners.

Taking and discussing the Myers-Briggs was an integral component of the instructional unit. Students began to use terms like “introvert/extrovert” and “sensor/intuitor” as part of their personal style vocabulary. These terms were coded as “personal traits” (see Table 2) on their c-maps. While students continued to use more common terms, such as “listener, thinker, and creative,” it was obvious from the c-maps that most had embraced a new and more descriptive vocabulary. In contrast, students discontinued the use of phrases like “be in a good mood” or “open-minded” and words like “choice” or “goals” to describe their personality traits.

Julia and Christine have both adopted the language of learning styles with their second maps. (Julia’s first map was used to illustrate how literally the prompt was interpreted in the initial mapping exercise.) Other students’ post-instruction maps (see Shannon’s maps) also showed that their abilities to articulate new understandings about themselves as learners was enhanced through this new “language” they developed as a result of instruction. Acknowledging personality and learning style traits she had not previously recognized, Shannon drew maps representing the use of a new vocabulary – indicating how instruction had influenced her thinking about herself as a learner.
To be the best learner I can be, I need to learn only what I want to learn. I don’t care about grades. I am extrovert, talkative, attentive, and a listener. I am sequential and verbal.

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Julia Post-map

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To be the best learner I can be, I need to be organized, sequential, and hands-on. I am an intuitor, visual, and interactive. I need to be sequential.
However, in some cases, acknowledging change can be nearly as difficult as adopting it. For example, when confronted with the prospect of comparing their pre- and post-instruction maps, some did not see a change in their vocabulary. Natasha and Michelle, like several others describing their pre- and post-maps, expressed the view that their maps were essentially unchanged. They were apparently unable
or reluctant to recognize that the words they used were different and their perceptions about themselves as learners had truly changed.

"To be the best learner I can be I need"

Natasha

Natasha Pre-map I think my maps were basically the same. I think my first map was more of a vague version of the second map. Natasha

Natasha Post-map I noticed my second map was the “in-depth” version of the main topics of the first map. When I first did this it was hard to explain but now I feel it was easier. Natasha
Michelle Pre-map *My two webs are very similar... most of the words I used are exactly the same.* Michelle

Michelle Post-map *The first one is more general and the second one I did was more in depth. Now that I have been paying attention to myself as a learner, I know better what kind of learner I am. In the first one it was more of how I like being taught, and the second one is more knowledgeable.* Michelle
Natasha’s five main and ten secondary ideas in her post-map showed significant growth in knowledge of herself and appeared to represent a shift in her thinking. For example, “interaction” is now expressed as “teach others.” Thinking about instruction – “some hands-on act” – has shifted from general to specific and she has incorporated a learning style term, kinesthetic, into her map. Likewise, the focus of Michelle’s map appeared to shift from external – explanation, extra help, teacher involvement, relaxed environment – to internal criteria such as verbal, visual, organized, and enthusiastic.

It appeared that these two students’ post-maps were significantly different from their pre-instruction maps. In her second map Natasha had a more focused approach, using only five first level descriptors as opposed to eight in her first map. On the other hand, even though Michelle continued to use some of the same first level descriptors (now nine rather than eight), her focus had shifted.

Although perhaps not fully realizing the significance of these changes, both Natasha and Michelle wrote narratives that acknowledged there were differences between their pre- and post-instruction maps. Specifically they realized that their depth of understanding had increased in their post-maps.

A key to learning whether or not the students actually understood their new vocabulary or whether it was simply a new list of terms they had memorized about themselves was whether and how they described these terms in their final “Theory of Learning” papers. Additionally, a second key indicator was how well students’ second set of maps showed they could apply this new knowledge of themselves to learning situations. Finding 3 asserts that the post-maps offered evidence that many students could use these terms to identify themselves as learners in learning situations.

Finding 3: *Students recognized and articulated the connections between their new understandings and their likelihood of being successful within certain instructional pedagogies*

In contrast to its limited use as a category code in the pre-map (2 percent), learning styles (combining multiple intelligences and learning style categories) accounted for 35 percent of the descriptors used in
the post-maps. Even more significant may be that students used learning style terms in conjunction with pedagogical terms much more extensively in the post-maps. In many instances, when students used one of the learning style vocabulary words at the primary level in the maps, they connected it to a related term of pedagogy. Melissa represents one of the students who, in the complexity of her
post-map, truly recognized several applications of her new found knowledge. As a global, mathematical learner she recognized that her approach to problem-solving was “step-by-step.” Having a verbal learning style and an extrovert personality type, she knew that discussion groups worked well for her to succeed as a learner.

In their map comparison narratives, Julia and Alma described the differences between their pre- and post-instruction maps.

I still need to be interested in the subject, but before I focused on things like sleep, study, and space. Now, although I’m an attentive listener, I thought more about how I am verbal learner and an extrovert. Julia

I had a different mindset from my old list compared to my new list. In the old I seemed to be set on things I needed, like encouragement, help, money, sleep, energy. In contrast the list I made today was more about the type of learner I am, social, active, global, intuitior. What I learned now from seeing these clusters together is that a lot of things I listed before connect in the big picture to the things that contribute to becoming a good learner. Alma

A comparison of Stacy’s pre- and post-maps clearly shows she internalized the meaning of the new vocabulary and was able to apply it, rather than continue to believe she needed “good teachers” and many external criteria for success. She recognized how being a “visual, sequential, and active” learner fit into her preferred style of pedagogy, and she knew that her “sensor” personality prefers “facts, real world connections, and examples” to be the best learner she can be.

Other students who had indicated they needed “interesting teachers” or some other extrinsic motivation to be successful now looked at the importance of making connections between their learning selves and instruction. The post-map narratives of these students (Jake and Nic) clearly reveal that their perceptions of learning became more personalized and moved toward the emphasis of instruction.
To be the best learner I can be I need:

- Resources
- Pressure Free
- Good Schooling
- Goals
- Food, books, computer
- Fun
- Time
- Money
- Party, movies, shopping
- Study
- Homework

Stacy Pre-map

Stacy
- Good teachers
- Some reward
- Money
- Time
- Home

Stacy Post-map

Stacy
- Mathematical
- Discussion
- Sequential
- Numerical
- Notes/diagrams
- Visual
- Active
- Sensor
- Listener
- Observer
- Facts
- Real world connections
- Hands on
The difference between the two are that I now know what I am. Before I was guessing what it would take to be a successful learner. Now I know that I need hands-on, active (kinesthetic) learning to be successful. Jake

A few things have changed in my learning. I understand more about having musical intelligence. I have found out that if I substitute class notes in for lyrics to music, I will learn the notes. I still do not like lectures. I am a hands-on learner. I also wrote that I am a procrastinator, spatial, and visual. Nic

Notice also how the students had acquired the language by which they could better articulate who they are as learners and how that knowledge brought new relevance to their perceptions of instruction.

I’m considered a sequential learner. I find it easiest to learn material presented to me in a logical order. I’m stronger when looking at the parts of a whole rather than understanding the whole and dividing it up into parts. I’m also a very visual/spatial learner because I can remember pictures and objects very easily and I prefer to learn with visual diagrams and step-by-step instructions. I believe this is my strongest of all intelligence’s I possess. Teachers that care about me as a student and who use visual aids help me in my learning process. Jose

One of the expressed concerns early in the semester had been to have “good” teachers. Perhaps students were now able to recognize that while “good” teaching at best enhances the learners’ opportunities to learn or at least makes learning more palatable, learning is, in fact the individual construction of knowledge and therefore the only person who can truly “teach” is the learner himself. This shift from an external toward an internal focus of responsibility appeared to occur among many of the study participants and led to one final assertion.

Finding 4: Students developed more sophisticated and complex understandings about themselves as learners and appeared to
move the locus of responsibility for their success as learners from external to internal criteria

Rebecca stated that the ideas she expressed about learning in her first (“old”) map were broad. She acknowledged that she had gained deeper understanding of herself over time.

I have learned a lot about myself as a learner. Now I am more pinpointed, more distinct, as to what I need. In the old one it was more broad. The second chart varies from the first because there are very different categories that get branched off. From just the words I used I know more about myself and more about how I learn. Rebecca

Rebecca’s final map shows that this understanding has also resulted in her looking within to find those factors that will allow her to become the best learner she can be. Maintaining the importance of the environment to her success as a learner, Rebecca now centered her map around learning styles and created links that indicate she internalized her new knowledge.
Melissa “discovered” herself. She asserted that, in light of this new understanding, she knows better “how . . . to be” to learn rather than merely “what” she needs to learn.

Now that I have written many papers and discovered myself, I can take the question to a different level. With my newfound knowledge I find ways to better assess myself. Now I am able to say how I need to be to learn the best instead of what I need to learn best. Melissa

By the end of instruction most students had internalized the new information they had been exploring. They began to recognize that their roles in the learning process were not passive. At least some of the students “discovered” new ways to describe their personal traits and learning styles, and then how to make the most of those qualities in the variety of learning environments they would encounter. They also saw themselves more realistically, recognizing that responsibility for learning has to do with overcoming poor study habits.

Study habits are the easiest to do and hardest to achieve. I’m a big procrastinator. I wait until the last minute to go over the material for a test or I just plain forget. If I really get into the information I’m going over then I will do better. Now that I have went (sic) into more detail of what type of learner I am, I now know what I can do to improve my study skills and my learning habits. I have discovered that I really had bad study skills, but my study skills have improved. Learning more about the way I translate information now opens up the door for me to be more successful at the things I do to learn. Ana

Ana’s narrative shows how this recognition of self “opened a door” for her to improve and be successful in college. Likewise, despite seeing herself as a procrastinator, Monica (no pre-map) also found strategies to become a successful learner. She used her map to examine her self-efficacy and reinforce her understanding of her learner profile by identifying specific strategies to assist her learning.
Interestingly, by the end of the semester, the personality descriptor “procrastinator” was used by five of the 20 students, whereas none used that term originally. As a result of writing self-diagnostic reflective pieces that emphasized study habits, some students became more cognizant of their personal learning habits and their influence on being successful learners. Even a student like Sarah, who all along seemed to recognize the importance of self-reliance and intrinsic motivation, appeared to benefit from the course of instruction. Originally Sarah wrote that it was “heart” that she needed to be the best learner she could be. Her initial map depicts the strong self image of a learner who listens to her own voice and understands she must take responsibility for her own learning. At the end of the semester Sarah was able to make more explicit those “intangibles” she described in her first map. She recognized that her view about those “inner drives” to reach a higher level of education she mentioned in her first map had further developed. Her term for that change was “technical,” as opposed to her initial “literal” approach. However, by contrasting her pre- and post-maps, it is clear
that the outcome of her many reflections allowed her to articulate a specific design that would support her future educational success.
Conclusions and Implications

This research offers promising new information to institutions of higher education and supports the study of learning styles as part of the first-year student experience. Offering instruction through a constructivist framework as described in this paper leverages learning. Even though most first-year students who participated in this study expressed difficulty in finding value in the ProSeminar course, structuring an orientation course like ProSeminar to assist students in understanding themselves can provide a scaffolding mechanism for students to become seriously engaged as learners.

First generation university students enter a challenging new world. They quickly find themselves totally immersed in a learning environment unlike any they have previously experienced. Finding support to overcome their concerns about sheer survival can be a daunting task. Becoming self-actualized learners, a goal of higher education, can be a goal that is never reached. However, as a result of the course of instruction reported here, these learners were given new tools that shifted their concerns to higher levels. It seemed that facilitating these introspections through the various exercises, including direct instruction, group discussions and presentations, and individual reflective assessments, helped students make explicit their knowledge of self as a learner and created important connections between personal preferences and learning styles and pedagogy. By the end of the semester they were becoming better able to think about learning intrinsically and were becoming more self-motivated to learn.

Evidence that students had developed more sophisticated and complex understandings about themselves as learners and evidence that students appeared to move the locus of responsibility for their success as learners from external to internal criteria can be seen in comparing the students’ pre- and post-instruction c-maps. What was striking was how the concepts had changed to reflect what students had learned through the instruction process. Clearly, students’ perceptions tended to become more focused on the intrinsic qualities needed to be successful learners than on the environmental and support structures indicated in their pre-maps.

One final, but important, observation related to these results was the decrease in the students’ expectations that external support
mechanisms were needed for them to be successful learners. While it should be expected that the students’ initial concerns about their new surroundings would diminish as the “shock” of being away from home had passed, and after overcoming fears and anxieties about the campus and finding the instructional and financial resources necessary to satisfy their basic needs, it was not an obvious path that their concerns would turn toward assuming responsibility as intrinsically motivated learners. This shift represents a giant leap toward becoming self-actualized learners.

By assisting in the explication of prior understandings and offering new ways of looking at their learner selves, the idea of being intrinsically motivated learners became plausible for many and a fruitful endeavor for some. Consequently, first-year education programs should consider structuring appropriate types of experiences for students to effectively reconstruct deeply held beliefs during this relatively short induction period into university life.

In summary, the results of this study indicate that students’ concerns about learning can be shifted from an external to internal locus of responsibility when attention is first given to who they are as learners and then to developing new conceptions of their learning selves. Adopting new attitudes about being the best learners they can be grew from an increase in self-confidence and self-efficacy as a result of becoming more familiar with themselves as learners.

References


