ONE SIZE DOESN'T FIT ALL: UNDERSTANDING STUDENT DIFFERENCES

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ABSTRACT

Learning styles is an often discussed topic in educational psychology, but less known in business education. This paper discusses various influences on learning, including motivation, personality, instructional preference, sensory modality and cognitive style. Studies on learning styles among business students are reviewed, with some conflicting results concerning the relationship between learning styles and performance. Using the VARK model, we discuss how multiple teaching methods can relatively easily be incorporated into business classrooms to meet the learning needs of students.

INTRODUCTION

Blank stares, sighs, boredom, frustration, giving up, complaining…every faculty member at some time has seen these signs from students. Often faculty members think that this is how I taught this subject matter last semester and the students were engaged—what is the difference this semester? The subject matter is the same, the faculty member is the same, the classroom setting is the same, so what is different? The only factor that has changed has been the students. There are different students in the class and they may have different learning styles. What worked with one set of students may not work the next semester, especially if faculty members are only using a narrow range of teaching methodologies.

This paper has two goals. One goal is to introduce business faculty to some theory from educational psychology, helping us better understand student differences. The second goal is to focus on how students take in information (sensory modalities) using Fleming's VARK framework. Business faculty may use Fleming's VARK model to design courses and utilize class time in ways that are more interesting and more productive for students.

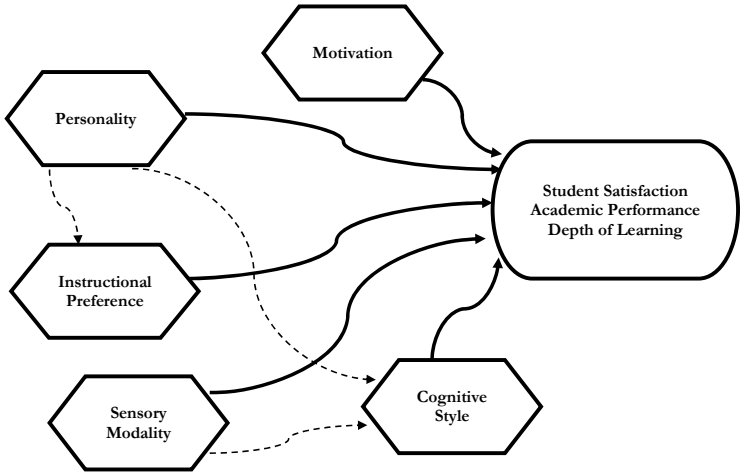
There may be multiple goals of improving course design: (1) Increase student satisfaction and reduce student frustration, (2) Increase academic performance in the course, (3) Increase depth of learning and (4) Increase awareness of student's own learning style for beyond the course (Hawk & Shah, 2007). As Jaju, Kwak, and Zinkhan (2002: 49) noted, business is a discipline that has "considerable variation in inquiry, norms, and knowledge structures." It is multidisciplinary in nature and requires both quantitative and qualitative skills. Additionally, business faculty seek activities that will help in linking theory to the business world increasing the complexity of the business discipline (Garber, Hyatt, Boya, & Ausherman, 2012).

LEARNING STYLES

Learning styles have been widely researched, especially in educational psychology. As business faculty, we need to recognize that students come into business courses with a wide

variety of strengths and preferences. As shown in Figure 1, there are several influences on learning including motivation, personality, instructional preference, sensory modality, and cognitive style.

Figure 1. Influences on Learning



Motivation. While faculty want all students to work for an 'A', not all are motivated to do so. Individuals take one of three approaches to studying: deep, surface and strategic. Students with a surface motivation rely on memorization; they struggle with logic and reasoning and are unlikely to make connections to material taught in prior courses. Strategic studiers are organized and manage their time with the goal of doing the necessary work to achieve the targeted grade. Students with a deep preference for learning are those faculty most enjoy: these students use logic and reasoning, they make connections with previous learning, they think critically and they enjoy learning. Entwistle, Hanley & Hounsell (1979), Duff (2004) and others advocate the Revised Approaches to Studying Inventory (RASI) to measure motivation.

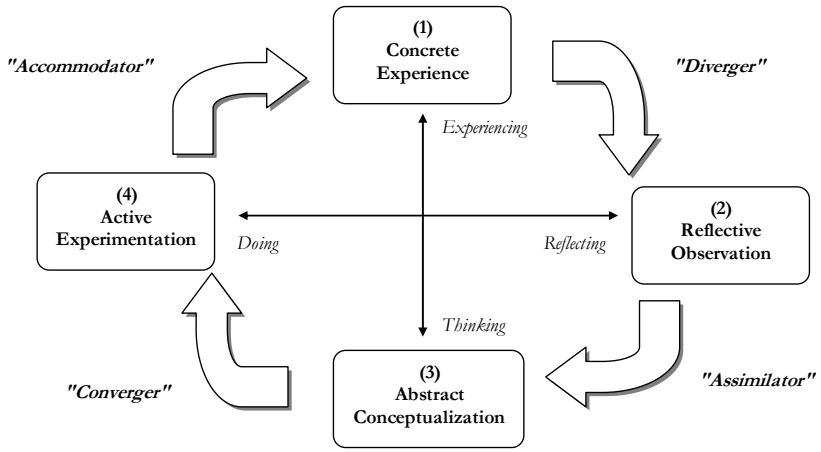
Personality. Just as students have different motivation, students have different personalities. The best known framework for describing personality is that developed by Myers-Brigg. Individuals differ along four dimensions: introversion or extraversion, sensing or intuition, thinking or feeling, and judging or perceiving. A student's personality type can influence what attracts his or her attention and what conclusions are drawn (Desmedt & Valcke, 2004). For example, a professor may notice that some students are comfortable in situations in which judgments are made objectively (Thinking) while other students include values and subjective factors (Feeling). Students may be energized by group work (Extraverts) or prefer to sort through concepts individually (Introverts) (Borg & Shapiro, 1996).

Instructional Preference. Riechmann and Grasha (1974) were early proponents of defining learner preferences in terms of social dimensions. Students vary along dimensions of avoidant-participant; competitive-collaborative and dependent-independent. Dunn, Dunn and Price (1989) developed a Learning Styles Inventory that, among other elements, incorporates questions on classroom environment (such as light, temperature and sound) and sociological preferences. Students may prefer learning alone, in a pair, in a group, with a teacher, or some combination thereof. If a class is having unusual difficulty with group work and discussion, it may be worth investigating the instructional preferences of those particular students.

Information Intake/Sensory Modality. Students come into class with differing motivation and instructional preferences. The next layer for faculty to consider is students' sensory modality. How do the students prefer to take in information? The VARK model focuses on four modalities: Visually, Auditory, Reading/writing and Kinesthetic (Fleming and Mills, 1992). Individuals may have strong preferences for one, or may be adept at learning via any of the four modes. Later sections of this paper provide details on how the modalities can be incorporated in business courses. Felder and Silverman created a hybrid model of learning in which sensory modality is one part; students differ in part on preferences for visual or verbal learning.

Cognitive Style. After students have taken in information, the information is processed and, again, individuals have different styles and preferences. Leading theories of cognitive processing include those by Kolb, Gregorc, and Honey and Mumford. Kolb's seminal work on experiential learning (1984) describes how learners have preferences for doing vs. reflecting and for experiencing vs. thinking. Learning occurs in a cycle, with successful learners moving through four phases: Abstract conceptualization, Active experimentation, Concrete experience and Reflective observation. Kolb implies that style is changeable with time and experience, rather than a structural trait that is stable over time. The Kolb Learning Style Inventory has been updated several times and is available online. Figure 2 illustrates Kolb's model.

Figure 2: Kolb's experiential learning framework. Adapted from Kolb (1984).



Instructors using Kolb's model will build courses that allow students to engage in exercises, observations, theories and applications. Gregorc also emphasizes that information processing varies from concrete to abstract and from sequential to random. Honey and Mumford (1992) built on Kolb's work to develop a Learning Styles Questionnaire (LSQ) targeted for management trainees. The LSQ measures whether an individual is most likely an activist, reflector, theorist or pragmatist. The Felder-Silverman model (1988) has components for information intake and for cognitive processing. In addition to the verbal-visual dimension mentioned earlier, students vary as to whether they are sequential-global learners, active-reflective learners or sensing-intuitive learners.

LEARNING STYLES AND BUSINESS STUDENTS

There have been several studies examining the learning styles of business students. The assumption is that the more faculty members understand the learning styles of business students, the better we can design our courses to facilitate student learning (Felder & Spurlin, 2005; Hawk & Shah, 2007; Jaju, Kwak, & Zinkhan, 2002; Luck & Estes, 2011; Sandman, 2009). However, there have been some conflicting results on the relationship between learning styles and performance. Several studies have found a positive relationship between learning styles and performance (Eom, Wen & Ashill, 2006; Moldafsky & Kwon, 1994; Moores, Change, & Smith, 2004; Nicholson, Hamilton, & McFarland, 2007). For example, economics students in the sample studied by Borg and Shapiro performed best when the student's Myers-Brigg personality profile matched that of the professor (1996). Students are more likely to have a positive attitude toward the subject when teaching and learning styles are similar (Charkins, O'Toole & Wetzel, 1985). However, other studies have not found links between performance and learning styles (Ayersman, 1996; Van Zwanenbert, Wilkinson, & Anderson, 2000).

In a meta-analysis of eight studies examining the learning styles of business students, Loo (2002) found some issues with the existing studies, namely small sample sizes. However, his recommendations include that educators use all four of Kolb's learning styles (i.e., accommodator, diverger, assimilator, and converger) because in his meta-analysis, he found there was diversity both among all business students and also within specific business majors such as accounting, finance, and marketing (which were the majors included in his study).

There are mixed results with regard to the preferred learning styles of business majors. Kolb (1976, 1984) reported that accommodators are often found in business disciplines. Reading-Brown and Hayden (1989) found that convergers were most common in their sample of business undergraduates with assimilators and divergers being the next most common followed by accommodators. In a study of accounting majors, Baker, Simon and Bazeli (1986) found the converger style was by far the most popular learning style, followed by the accommodator, diverger, and assimilator, which were relatively close to each other in popularity. Contrastingly, Brown and Burke (1987) found that accounting majors did not have a preference with regard to learning styles. Holley and Jenkins (1993) found that accounting majors were more likely to be assimilators, and then far behind was divergers, convergers, and accommodators. As can be seen, the research to date has not revealed a common learning style for accounting majors.

Brown and Burke (1987) also studied finance and marketing majors. Finance majors were found to be more likely to be assimilators and marketing majors were more like to be divergers. Using the Felder-Solomon Inventory of Learning Styles (Felder & Silverman, 1988), Sandman (2009) found the most dominant profile for undergraduate business telecommunications students to be Active-Sensing-Visual-Sequential. Luck and Estes (2011) found that all business concentrations have very similar learning styles. Boatman, Courtney, and Lee (2008) found that a strong preference for visual learning style positively influenced student performance in an introductory economics class. According to the VARK website, business students have a preference for Reading/Writing, followed by Kinesthetic, Auditory, and then Visual (www.vark-learn.com). Sandman (2014) found that the preferred learning style of students may depend more on the course than the major and that business students adapt their preferred learning style to the subject of the course. MBA students may be more balanced learners than undergraduates (Henry, 2004).

Given the increasing globalization of business education, there have been an increasing number of studies focusing on differences of learning styles between different nationalities. Jaju, Kwak, and Zinkhan (2002) posited that learning styles are influenced by cultures. They found differences in learning styles in business students from the U. S., India, and Korea. Likewise, Hefferman, Morrison, Basu, and Sweeney (2010) examined differences in learning styles between Australian and Chinese business students and found substantial differences. Using Honey and Mumford's (1993) learning style test, Kakkonen (2007) studied the learning styles of students from Belgium and Finland, but didn't contrast the two groups. Kakkonen found the strongest learning style for this combined group of Finnish and Belgium students was reflector, followed closely by pragmatist and theorist. Activist was a distant fourth. In examining the development of cultural intelligence through international experience, Li, Mobley, and Kelly (2013) found that having a divergent learning style, as per Kolb's experiential learning theory, strengthened the positive relationship between length of overseas experience and the development of cultural intelligence for graduate business students and international executives in China and Ireland.

Several studies have found that matching teaching and learning styles is important in student performance (Charkins, O'Toole, & Wetzel, 1985; Davis & Bostrom, 1993; Felder, 1993; Fleming, 2001). Not surprisingly, other studies disagree. In a study of factors affecting student performance in an introductory accounting class, Clark & Latshaw (2011:19) stated, "It is misguided to presume that student performance will improve if teachers adjust their teaching styles." Karns (2006: 56) also found that "catering intensively to learning style individual differences is not warranted." The largest criticism comes from Pashler et al. (2004). After a large review of the literature, they criticize the experimental design and methodology used to assess effectiveness of instructional design. Pashler et al. concludes "if a study of a particular learning-style classification and its corresponding instructional methods was to reveal the necessary evidence, such a finding would provide support for that particular learning-style classification only—and only then if its benefits surpass the high costs of student assessments and tailored instruction (2004:116).

THE VARK FRAMEWORK

Although there are mixed results from the literature review regarding the relationship of learning styles with performance, there are enough studies that found a positive relationship to warrant more discussion and to give due consideration to developing multiple instructional methods to meet multiple learning styles. Fleming's VARK model is particularly relevant for business faculty as it highlights the different ways in which students absorb information during class time. If class time uses only one method (e.g. discussion), then only one group (e.g. Auditory learners) is satisfied. By structuring class time with the four modes in mind, faculty may reduce frustration among students. Descriptions of the four styles follow in Table 1.

Table 1. The Four Learning Styles represented in the VARK Framework

Sensory Mode	Characteristics
Visual (V) or Graphic	Take in information through symbols and design: Maps, charts, diagrams, whitespace, patterns, shapes.
Auditory (A)	Take in information through hearing and speaking: Lectures, group discussion, radio, web-chat and talking things through (even talking to self).
Reading/Writing (R)	Take in information through text: Essays, reports PowerPoint, textbooks, lists, dictionaries, and quotations.
Kinesthetic (K)	Take in information by doing: Simulations, demonstrations, case studies, labs, field trips and role play.

Source: www.vark-learning.com

Visual students may not benefit from PowerPoint, as those slides primarily involve reading words. Auditory students are the ones most likely to repeat what the professor just said or ask an obvious question. This doesn't indicate lack of attention; it indicates the student is taking information in. Note that "R" learners are the only ones likely to say that a textbook is helpful.

As was mentioned in the earlier part of this paper, there are many different inventories of learning styles. According to Hawk and Shah (2007), VARK is the only model in their review that contains the read/write and kinesthetic dimensions. VARK also focuses on the sensory preferences for how to absorb and deliver information, allows for the strength of the preference for the learning style to be assessed, and allows for multi-modal preferences (Boatman, Courtney, & Lee, 2008). Students may determine their VARK learning styles via short web-based or paper-based questionnaires. A recent study by Leite, Svinicki, and Shi (2010) found evidence of validity and reliability of the VARK instrument. The Cronbach's alphas were in the acceptable range of .77-.85 for each of the VARK subscales.

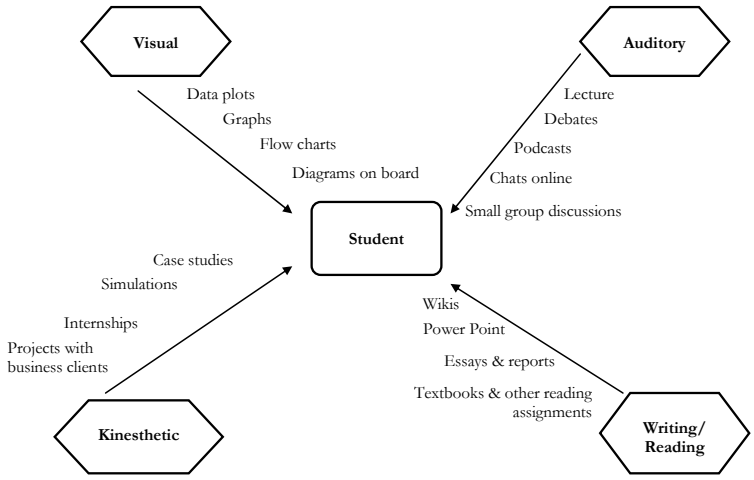
RECOMMENDATIONS FOR TEACHING PEDAGOGY

One way to improve students' experience is to design a course with aspects that appeal to a variety of learning styles. A second way is to help students understand their own styles and learn techniques to improve study skills. Dodd (2004) prepared a lecture in which students learned their preferred style and were given appropriate study techniques via handouts and illustrations. Students who participated in the lecture scored higher on subsequent exams than students who did not receive the instruction. In addition to faculty being cognizant of using multiple methods to meet varying learning styles, students should also be encouraged to develop other learning styles and to become more balanced in their learning style (Garber, Hyatt, Boya & Ausherman, 2012).

It is unlikely that individually tailoring instruction is worthwhile for business faculty, given other demands for our time and resources. Providing a range of learning experiences will typically suffice to meet the multiple learning styles that are present in any particular groups of students (Karns, 2006; Sandman, 2009). For example, Moryl and Jiang (2013) found that using audio-only podcasts in introductory economic courses helped students with auditory/verbal learning styles. They noted that out-of-class activities tend to be aimed more at reading and

visual learners (e.g., reading assignments and videos). By increasing the range of activities, more learning styles were accommodated.

Figure 3. Reaching students through the V/A/R/K modes



The information in Figure 3 illustrates the variety of teaching methods that can be used to accommodate the differing learning styles of students. As can be seen, a typical business class can easily incorporate many of these teaching methodologies. For example, an Organizational Behavior class may have lectures (Auditory) accompanied by Power Point slides (Writing/Reading) that are based on textbook or other reading assignments (Writing/Reading). Additionally, the professor may use the board to draw diagrams or graphs (Visual) to illustrate topics such as Expectancy Theory of Motivation. The class may work on case studies (Kinesthetic). These class activities are very common in many classes and shows that accommodating all learning styles is not as difficult as it may sound at first.
Examples of how many business disciplines typically incorporate the VARK learning styles are in Table 2.

FUTURE DIRECTIONS FOR RESEARCH

Although there has been research examining the learning styles of business students, the mixed results indicate that this area is worthy of additional research. Accounting students seem to have had the most research done and it would be worthwhile to address this issue with other business majors such as management or economics. Additionally, with the increasing globalization of business education, it seems like a stream of research following up on the few studies that have examined learning styles from a cross-cultural perspective is warranted. Learning is multi-dimensional and is much like peeling an onion (Curry, 87). One size does not fit all.

Table 2. An Illustration of How Typical Business Courses use a Variety of VARK Learning Styles

Discipline	Course	Typical Class Activity	VARK Learning Style Addressed
Accounting	Tax	• Create audit diagrams • Webinars on tax topics • Summarizing IRS publications • Volunteering to prepare tax returns for low-income individuals	• Visual • Auditory • Reading • Kinesthetic
Economics	Principles of Microeconomics	• Illustrating market processes with supply & demand graphs • Listening to podcasts • Reading articles from the business press • Class experiments & market trading	• Visual • Auditory • Reading • Kinesthetic
Finance	Investments	• Stock charts • Lecture • Reviewing prospectuses • Investment simulations	• Visual • Auditory • Reading • Kinesthetic
Management	Organizational Behavior	• Using the board to diagram theories such as Expectancy Theory of Motivation • Small group discussions • Essays • Case studies	• Visual • Auditory • Reading • Kinesthetic
Marketing	Marketing Research	• Mind maps • Conduct focus group interviews • Reports • Projects with business clients	• Visual • Auditory • Reading • Kinesthetic

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