

# **ARE LEARNING PREFERENCES (VARK) OF ADVANCED ACCOUNTING STUDENTS AT FOUR UNIVERSITIES DIFFERENT FROM FINANCE STUDENTS?**

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## **ABSTRACT**

The VARK learning-style instrument was administered to Advanced Accounting students at three types of universities located in four different geographical regions of the country. VARK is an acronym for Visual, Aural, Read/Write, and Kinesthetic learning styles. Generally, the Advanced Accounting students had similar learning-style preferences. Also, the Advanced Accounting VARK results were compared to the VARK results of finance majors at a large state university (LU-FIN) The Advanced Accounting students as a whole were significantly ( $p = .05$ ) less multi-modal than the students at LU-FIN. The VARK learning-style instrument should help instructors become aware of the different learning preferences of the students in their classes.

## **INTRODUCTION**

There have been recommendations for revision of accounting education for more than half of a century by various committees. The Pathways Commission in 2012 advocated that accounting educators have responsibilities that involve both curricular dimension (what we teach) and pedagogical scope (how we teach). This reflects the previous call by Albrecht and Sack (2000) as well as several professional accounting committees for the need for change in the methods of teaching accounting courses.

In order to assist instructors in teaching, Shanahan and Meyer (2001) suggested that research be conducted to facilitate a better understanding of what, why, and how students learn. More recently, Apostolou *et. al.*, (2013) indicated that accounting research needs to identify the best ways to teach or to learn core professional competencies (e.g., analytical skills). One way to change the delivery method and to better understand the student's learning process is to consider the student's learning styles or preferences when teaching.

At many universities finance majors are required to take an upper-level accounting course (e.g., intermediate accounting and/or cost accounting). At some universities a separate intermediate or cost accounting course/section is taught for finance majors only and another course/section is designated for accounting majors. However, at many universities both accounting majors and finance majors are taught in the same class. Whether in a separate course/section or in a blended class (both accounting and finance majors), intermediate accounting or cost accounting instructors should consider the different

purposes and/or learning preferences of both accounting students and finance students when preparing the course syllabus. This is especially relevant for blended classes.

According to Wessels (2010), the instructor's fundamental role is to encourage students to utilize learning activities that will most likely result in the students achieving the desired learning outcomes for the course. Specifically, Helliard (2013) suggested that teaching techniques that engage accounting/finance students should be incorporated into accounting education. In addition, the effectiveness and quality of the learning by the students according to Hawk and Shah (2007) can be enhanced by the use of learning-style instruments to assist instructors in the selection of learning activities. The students' learning styles should be considered when developing teaching techniques to encourage or engage students in studying/learning. Our research examined the learning preferences of students in the Advanced Accounting course at four different universities. In addition, our research investigated the learning preferences of students in another senior level course (Intermediate Accounting for Finance Majors).

In addition, Bandura and Lyons (2012) recommended that instructors should provide different learning approaches (e.g., problem-solving, active learning, or lecture) in teaching because students do not all learn using the same technique. This may be especially important when teaching students in an upper-level accounting course with not only accounting majors but also other majors (e.g., finance, criminal justice, dietitians). Previously, Baltazar *et. al.* (2001) suggested that course designs should include instructional methods that reflect student learning preferences because of the individual learning-style differences of the students. Thus, it appears that the students' learning preferences should be considered when designing an activity or method of course instruction.

Sandman (2009) indicated that by using *any* learning-style instrument an instructor can obtain insight about how to provide for the diverse student learning styles that are present in a class. Fleming and Mills (1992) developed a short instrument (VARK) to determine sensory modality preferences when processing information [i.e., instructional preference(s)]. VARK is an acronym for Visual, Aural, Read/Write, and Kinesthetic sensory modalities that are utilized for learning information.

When using the VARK inventory instrument [Fleming and Mills (1992)], Bonwell (2000) found that there were differences in learning preferences for students at the University of Arizona (general education class), Ohio State University (agricultural economics majors – 2<sup>nd</sup> & 3<sup>rd</sup> year), and St. Louis College of Pharmacy (Management and Organization Behavior course). Are there learning preference differences of students within the school of business (e.g., between accounting majors and finance majors)? Our research study investigated whether there are learning preference differences between accounting majors and finance majors.

According to Fleming and Mills, the “Visual Preference” modal includes depiction in the form of charts, graphs, flowcharts, symbolic arrows, circles, hierarchies, and other methods that can be used to represent what could be presented in words. The “Aural Preference” modal involves learning from lectures, tutorial and talking to other students. Students with the “Read/Write Preference” modal learn when the information is displayed as words. The “Kinesthetic Preference” modal involves learning through experience, examples, practice or simulation. It should be noted that students can have more than one learning preference (i.e., multi-modal).

In our research study, the VARK instrument was administered during the first day of class to Advanced Accounting students at four different universities. These universities can be classified into three different

types (urban state, regional state, and private). These universities are located in different regions of the country (Midwest, West, East, and Southwest). First, the results of the VARK instrument will be examined/compared for these four universities. Also, the Advanced Accounting VARK results will be compared to the VARK results for finance majors taking an upper-level accounting course.

## THEORY

Baldwin and Reckers (1984) briefly described the David Kolb model and the concept of learning. These authors suggested that learning styles can be used to make the accounting education process more effective and efficient. Subsequent to the Baldwin and Reckers (1984) research study, accounting educators have attempted to determine the predominant learning styles of accounting students (Baker *et al.* 1986, 1987; Togo and Baldwin 1990; McKee *et al.* 1992) and of practicing accountants (Collins and Milliron 1987). Geiger (1992) investigated whether students with certain learning style preferences achieve at a higher level or are more gratified with their accounting courses. Geiger and Boyle (1992) examined whether students with the same learning preference as their instructor obtain higher grades in accounting courses. Kolb's (1976, 1985) *Learning Style Inventory* (Kolb's LSI) was utilized by a majority of these research studies.

However, there is substantial criticism of Kolb's LSI in the education literature (e.g., Sims *et al.* 1986; Sims *et al.* 1989; Wilson 1986; Veres *et al.* 1991; Atkinson 1991; Cornwell *et al.* 1991; Stout and Ruble 1991a, 1991b, 1994; and Ruble and Stout 1993). Because of this criticism Geiger and Boyle (1992); Stout and Ruble (1994); and Rebele *et al.* (1998) suggested that alternative learning style instruments be evaluated.

Because the Advanced Accounting students participating in our research involved different types of universities with diverse students, which are located in four different regions of the country, it is possible to examine the reliability of the VARK learning style inventory for the Advanced Accounting students. Many of the students at the urban Midwest university are originally from third world countries. The Southwest state university is located on the Mexican border with both Mexican and U.S. students enrolled in the class. As a result, the researchers had a rather diverse group of students who took the VARK learning style inventory. The following hypothesis was used to ascertain if the Advanced Accounting students at the private (East) university [PU-E], the urban (Midwest) university [UU-M], the regional (West) university [RU-W], and the state (Southwest) university (SW-S) have similar learning preferences:

Ho<sub>1</sub>: There is no difference in the learning preferences of the Advanced Accounting students at PU-E and UU-M (RU-W) [SW-S]; at UU-M and (RU-W) [SW-S]; and at RU-W and SW-S.

As discussed previously, individual students may have more than one learning preference (i.e., multi-modal). Bonwell (2000) indicated that the VARK inventory produces a consistent percentage relationship between students who are multi-modal vs. one-modal in various educational fields at several universities. To help evaluate the validity of using the VARK instrument for Advanced Accounting students, the researchers investigated whether there was any difference in the proportion of Advanced Accounting students with multi-modal learning preferences at the four research-study universities. The following hypothesis was used to examine this question:

Ho<sub>2</sub>: There is no difference in the proportion of multi-modal students at PU-E and the proportion of the multi-modal students at UU-M (RU-W) [SW-S]; at UU-M and (RU-W) [SW-S]; and at RU-W and SW-S.

Baldwin and Reckers (1984), Baker, *et al.* (1986), Brown and Burke (1987), and Baker, *et al.* (1987) found with the use of Kolb's LSI that accounting students have different learning styles from students majoring in other fields. Will the VARK learning style inventory instrument produce similar results to Kolb's LSI in the school of business (finance majors) and a related business field (agricultural economics)?

By using the results of the VARK learning preferences of finance majors (seniors) at a large state university (LU-FIN) and the results reported by Bonwell (2000) for the Ohio State University (agricultural economics majors – 2<sup>nd</sup> & 3<sup>rd</sup> year) [OSU-AE], it is possible to compare the Advanced Accounting students in our research study with students in other related fields of study. The following hypothesis was used to determine if the proportion of multi-modal Advanced Accounting students was similar to the proportion of multi-modal students in related educational fields at other universities (LU-FIN and OSU-AE):

Ho<sub>3</sub>: There is no difference in the proportion of the multi-modal students in Advanced Accounting and the proportion of the multi-modal students at LU-FIN (OSU-AE).

## **RESEARCH METHODS**

As stated previously, the VARK inventory instrument was administered on the first day of class to Advanced Accounting students at three different types of universities (urban state, regional state, and private). These universities were located in four different regions of the country (Midwest, West, East, and Southwest). The researchers taught three of the courses and the fourth course was taught by another instructor. In addition, the VARK instrument was administered on the first day of class to senior finance majors at a large state university by one of the researchers.

The VARK inventory instrument takes about 10-15 minutes to administer. The instructors required the students to complete this instrument the first day of class. A few days after administering the instrument, the instructors individually informed each student of their learning preferences. The Chi-Square Test of Independence was used to test the hypotheses.

## **VAR K INVENTORY INSTRUMENT RESULTS**

The results of the VARK inventory instrument administered in the Advanced Accounting classes at the four universities were analyzed. As expected, there were no significant differences between the overall learning preferences of the students at these universities. This could imply that by the time the accounting students are seniors they have developed similar learning styles.

However, there were some interesting trends in the data that should be investigated further. For example, the majority of the Advanced Accounting students preferred Kinesthetic or the Read/Write learning styles. Overall, less than one-third of these students used Aural as a learning style, while many instructors of Advanced Accounting classes across the nation utilize lectures as the primary teaching tool. Perhaps other teaching techniques should be used in Advanced Accounting courses that draw upon the other learning preferences of the students.

The least utilized learning preference of the Advanced Accounting students was the Visual Preference (overall, 12.28%). Should the accounting students' ability to learn from charts and graphs (Visual Preference) be improved before they are ready to enter the accounting profession?

For the Advanced Accounting classes, the one-modal students were compared to the students with multi-modal preferences. Even though the private university (East) [PU-E], the urban university (Midwest) [UU-M], and the state university (Southwest) [SW-S] had similar results, the regional university (West) [RU-W] had less multi-modal students than the other three universities. However, there were no significant differences. How do these results compare to students in other related educational fields offered at other universities?

Our research utilized the results for the one-modal students compared to the students with multi-modal preferences reported by Bonwell (2000) for the Ohio State University (agricultural economics majors – 2<sup>nd</sup> & 3<sup>rd</sup> year) [OSU-AE]. For comparison purposes the results involving finance majors at a large state university (LU-FIN) was also used. The OSU-AE and LU-FIN results were compared to the overall Advanced Accounting results that the researchers found for the four universities in our study. The total overall Advanced Accounting results were utilized because generally there were no significant differences between the four research-study universities.

Bonwell (2000) indicated that the majority of the students should be multi-modal. Thus, as expected, 50% to 90% of the students in all subject areas in his study were multi-modal (including OSU-AE). However, overall, the Advanced Accounting students in our study were not as strongly multi-modal as the students in the other related educational fields. In fact, there were significant differences ( $p = .05$ ) between the multi-modal Advanced Accounting students and the multi-modal students at LU-FIN. This was not unexpected because other researchers [Baldwin and Reckers (1984), Baker *et al.* (1986), Brown and Burke (1987), and Baker, *et al.* (1987)] found that accounting students have different learning styles from students majoring in other fields using Kolb's LSI.

Bonwell (2000) indicated that no learning preference will dominate. This appears to be the case for the multi-modal Advanced Accounting students in our study. However, these students do appear to use the Visual modal less often than the other learning preference modals. Also, there were no significant differences between the multi-modal Advanced Accounting students at the four research-study universities.

How do the multi-modal Advanced Accounting students compare to the multi-modal students in the related other academic areas? There were significant differences between the multi-modal Advanced Accounting students and the multi-modal students at LU-FIN ( $p = .01$ ). The results for the multi-modal LU-FIN students may have occurred because these students preferred the Aural modal more often than the multi-modal Advanced Accounting students.

Are there specific learning styles that are different for the Advanced Accounting students than from the students in the other related study areas? Overall, the Advanced Accounting students tend to utilize the Visual Learning Preference less often than the students in the other related fields of study. In fact, the usage of the Visual Learning Preference style of the Advanced Accounting students in total was significantly different from the students at LU-FIN ( $p = .05$ ), and OSU-AE ( $p = .10$ ). If an upper-level accounting course is blended with both accounting and finance majors or if a separate section/course is

offered for finance majors, the instructor should be aware that finance majors appear to be more visual than accounting students when developing the course.

When looking at the proportion of the students who prefer utilizing the Kinesthetic learning style, a significant difference ( $p = .05$ ) was found between the Advanced Accounting students and the LU-FIN students. It appears that the LU-FIN students tend to utilize the Kinesthetic Learning Preference more often than is utilized by the Advanced Accounting students. This difference should be considered by instructors who teach either upper-level blended classes or a separate section/course for finance majors.

For the Aural Learning Preference, there was a significant difference ( $p = .05$ ) between the Advanced Accounting students and the LU-FIN students. It appears that generally the Advanced Accounting students preferred using the Aural method of learning less often than the LU-FIN students. Thus, an instructor teaching an upper-level separate section/course for finance majors may want to include more listening activities in the separate section/course than in the regular upper-level accounting courses. In addition, instructors of blended upper-level accounting courses may need to incorporate more varied activities than in non-blended upper-level accounting courses.

From the analysis, it appears that lecturing may not necessarily be the best method for teaching the Advanced Accounting students in our study. Therefore, the Advanced Accounting instructors should consider utilizing various approaches when teaching students with diverse learning preferences.

## **RECOMMENDATIONS**

The use of the VARK inventory instrument should help instructors become aware of the different learning styles of the students in their classes. When teaching it is always helpful to be conscious of your student's learning preference(s). When the students have diverse learning preferences in a class, instructors should employ various teaching techniques to make learning easier for them. This is especially important for an instructor who is teaching a blended upper-level accounting course with so many learning-preference differences between accounting majors and finance majors. Further, instructors who teach a separate upper-level accounting section/course for finance majors may want to utilize different teaching techniques in this separate section/course than in a regular upper-level accounting course because finance majors have substantially different learning preferences than accounting majors. Also, the students should be made aware that not all of the students in the class learn in the same manner when a different teaching strategy is being utilized.

The researchers have found that knowledge of the student's learning preferences was beneficial when teaching Advanced Accounting students. However, further research should be conducted using the VARK inventory instrument to determine whether there are common results on a nationwide basis in other accounting subject areas. Further, there should be additional research conducted to determine whether the learning preferences of the finance majors at LU-FIN are the same nationwide.

## **REFERENCES**

The references are available upon request.