Exploring the Learning Style Preferences Used by Accounting Students in a University of Technology in South Africa

Madoda Cekiso¹, Jeffrey Arends² and Bulelwa Mkabile³

¹Tshwane University of Technology, Department of Applied Languages, South Africa
E-mail: CekisoMP@tut.ac.za

²Walter Sisulu University, Faculty of Education, Mthatha Campus, South Africa

³Walter Sisulu University, Faculty of Education, Butterworth Campus, South Africa

KEYWORDS Learning Styles. Learning Style Inventory. Accounting Students. Tertiary Institutions. Teaching Styles. Individualism

ABSTRACT The purpose of this study was to explore the learning style preferences used by accounting students at an institution of higher learning in South Africa. Kolb’s Learning Style Inventory (LSI) was used to identify the learning style preferences of the first, second and third year accounting students. A purposeful sample of 232 students was used in this study. The findings of the study revealed that students were mostly Convergers and the least popular group was that of Divergers. When the data was compared according to levels of study, the findings showed a significant rise in percentage of Divergers from 1st to 2nd year. In addition, Assimilators, Convergers and Accommodators decreased slightly from 1st to 2nd year. During 3rd year, all group percentages were constant. This means that the Convergers were predominant throughout all the levels. When the data was compared by gender, the results indicated that there was no statistical significance between male and female students in their choice of learning style preferences.

INTRODUCTION

Within the education environment, the establishment and identification of students’ leaning style preferences has often been recognized in the education system (Paulraj et al. 2013). The literature on learning style preferences has revealed that identification of learning styles could assist academicians understand student preferences of learning that could assist in selecting appropriate instructional methods and educational options (Paulraj et al. 2013; Cekiso 2011). In addition, McChlery and Visser (2009) point out that identifying students’ learning characteristics may help in improving course design, designing learning outcomes and assessment to make learning more accessible to students. Accessibility of learning to students has been a concern in many tertiary institutions and as such many strategies and techniques have been developed to solve the problem. For example, Dunlosky et al. (2013) identified learning conditions, student characteristics, materials and criterion tasks as areas that need to be considered in order to improve access to learning at universities. Research on student characteristics has identified the learning style preferences as one of the important variables that contribute to students’ access to learning. According to De Vita (2001) and Kolb (2002), learning style theory has been utilized in a number of disciplines such as economics and business education. Dunn (1990) describes learning style as the way each student begins to concentrate, process and retain new and difficult information. In the context of this study, learning styles refers to how a student prefers to approach a learning task. A growing body of research suggests that a match between teaching and learning styles helps motivate students’ process of learning (Gilakjani 2012; McChlery and Visser 2009). In addition, Warn (2009) points out that learning style is one of the predictors of academic achievement. Exploring the learning style preferences of the university students should be seen against the background of the wider debate on student retention, high dropout rate and poor graduation rate (Du Plessis et al. 2007). Therefore, this study seeks to explore the accounting students’ learning style preferences in order to identify the manner in which, and the conditions under which, they efficiently and effectively perceive, process, store and recall what they learn. The literature has revealed that it is crucial for the students to identify their learning styles so that they get to use them during the learning process (Matthews 1969). In this study, accounting students refer to students majoring in accounting.
Du Plessis et al. (2007) states that if an institution has a clear understanding of the profile of successful and risk students in a particular field or subject it can plan and strategize for effective interventions. Subsequently, this study explores the learning styles used by the accounting students so as to provide relevant instruction, classroom activities and assessment. Matthews (1996) claims that accounting students think holistically. However, there are contrasting views in literature about the learning styles used by accounting students. Some studies showed that most accounting students were assimilators (Barker et al. 1987) whereas others indicated that accounting students were convergers (McKee et al. 1992). The literature on accounting students’ learning styles also revealed that the students’ learning styles differ according to gender. The results of a study conducted by Jenkins and Holley (1991) indicated that female students learn through reflective observation and males prefer abstract conceptualization. On the contrary, the results of a study conducted by Cekiso (2011) revealed that there was no significant difference between male and female students in their learning style preferences. Therefore, this study aims to contribute to the development of the body of research into student learning within the accounting discipline.

Prior Learning Style Research in Accounting

Learning contexts can be seen to vary across and within disciplines. Different academic fields provide different learning environments, with differences in students’ learning approaches across disciplines being observed (McChlery and Visser 2009). Therefore, exploring learning styles used by accounting students is crucial as it is likely to solve learning problems pertaining to them. McChlery and Visser (2009) conducted a study comparing the learning styles of accounting students in the United Kingdom and South Africa. The results of their study revealed that there were statistically no differences between the learning styles used by accounting students in the two countries. In a similar study, where two countries were compared, the results are different. For example, McKee et al. (1992) compared the learning styles of the Norwegian accounting students and United States accounting students. The results indicated that the Norwegian accounting students’ had the learning style preference of assimilators, while United States’ accounting students’ dominant learning style was converger. In another study, Sugahara and Boland (2010) compared the learning style preferences of the accounting students in Japan and Australia using Kolb’s learning style inventory. The findings indicated that differences in the particular learning styles of doing/watching (AE-RO) between the two nationality groups were significantly associated with individualism. Baker et al. (1986) surveyed the learning style preferences of accounting students. The results indicated that most of the accounting students fell within the diverger category. This finding is contrary to Collins and Milliron’s (1987) who observed that the majority of their accounting students were convergers.

In the accounting literature, some previously conducted studies have discussed cultural barriers that may affect accounting students’ learning style preference. For example, Novin et al. (2003) conducted a study on accounting, management, marketing and general business majors. In their study they used the Kolb (1981) learning strategy inventory to identify the preferred learning styles used by students. The re-
results indicated that the vast majority of accounting students demonstrated clear preferences for assimilator and converger. Desai and Tailor (1998) conducted further research on Australian accounting students (Australian, Asian and other). Their study sought to explore the learning style preferences of accounting students in an attempt to recommend better teaching methods in multicultural classrooms. The results revealed that a comparison of learning styles between domestic the Australian and the international Asian students was significantly influenced by the individualism and collectivism dimension. Donald and Jackling (2007) conducted another study on accounting students at an Australian university. Their study sought to address a growing concern that the intake of overseas students was causing significant changes to the classroom environment. Their findings showed no significant differences in the learning styles between local Australian students and international Chinese students. Research on learning style preferences has shown that gender is one of the variables that influence students’ learning style choice. For example, the results of studies conducted by Chen (2008) and Garland and Martin (2000) indicated that gender had a significant impact on how students choose their learning styles. However, the results of a study conducted by Byrne and Willis (2008) showed that both males and females used similar learning styles.

**Match or Mismatch Between Learning Styles and Teaching Styles**

The literature on learning styles has focused on procedures used to identify teaching and learning styles and the effect of a match between the two on student learning outcomes and evaluation of instruction. Reid (1995) proposed two hypotheses about learning styles. The first one is that all students have their own learning styles and learning strengths and weaknesses. The second one is that a mismatch between teaching and learning styles causes learning failure, frustration and demotivation. He further, states that both students and teachers should be aware of their teaching and learning styles, respectively and should try to harmonize them. In addition, Sprenger (2003) points out that teachers should assess the learning styles of their students and adapt their classroom methods to best fit each student’s learning style. This idea is supported by Sims and Sims (2006), who state that balancing instructional methods and the students’ learning style preferences leads to an increased comfort level and willingness to learn among students. On the other hand, Merrill (1994) points out that students may become unwilling to learn and get bored easily when mismatches exist between their learning styles and the lecturers’ teaching styles. He further states that this could make students perform badly in tests and cause them to lose interest in learning the subject when they feel helpless and frustrated. In addition, Novin et al. (2003) point out that since students process information in different ways, many students in a class may experience some degree of discomfort or anxiety because the instructor is not using the learning approach they most prefer. Thus, students who are having this difficulty may give up on their learning efforts. Subsequently, many studies have been conducted that seek to identify students’ learning style preferences so as to avoid frustration and boredom in the learning process (Cekiso 2011). Some studies have compared senior and junior accounting students’ learning styles and the results have indicated that more junior accounting students tend to become convergers while senior students tend to become assimilators.

**Purpose of the Study**

This study sought to investigate the learning style preferences used by accounting students at an institution of higher learning in South Africa. Exploring their learning styles is crucial in order to improve the quality of teaching and learning process. Specifically, the study sought to address the following research questions:

1. What learning styles do accounting students frequently to perceive, process, store and recall information?
2. Does the learning style preference of the accounting students differ according to the level of study?
3. Does the learning style preference of the accounting students differ according to gender?

**METHODOLOGY**

**Research Design**

The study was quantitative in nature and followed a survey design. Surveys are normally appropriate for studies that seek to obtain par-
participants’ perceptions, opinions and beliefs. The Learning Style Inventory developed by Kolb was used to explore the learning style preferences of the accounting degree students and to determine if there were differences in strategy choice according to gender and the level of study. A purposive sample of 126 females and 106 males was drawn for the learning style inventory. The sample consisted of all students registered for accounting levels one, two and three in 2013 with a total of 232 students. A letter was handed out with the questionnaire, explaining the purpose of the study and providing instructions as to how the questionnaire be completed.

**Instrument**

The instrument used in this study was Kolb’s Learning Style Inventory (LSI). The instrument contains 12 questions, which require the respondent to rank statements reflective of the identified four modes for perceiving and processing information, thereby indicating the individual’s preferences for each. The questionnaire is divided into four modes, that is, Concrete Experience, Abstract Conceptualization, Reflective Observation and Active Experimentation. The extent to which an individual prefers Concrete Experience for perceiving information is denoted in a score called “CE”, and the extent to which an individual prefers Abstract Conceptualization is denoted in a score called “AC”. The extent to which an individual prefers Reflective Observation for processing information is denoted in the “RO” score, and the extent to which an individual prefers Active Experimentation is denoted in the “AE” score. The lowest raw score for any of the modes is 12 and the highest is 48. Within these four modes Kolb identified four learning styles, that is, the Diverger, Assimilator, Converger and Accommodator. Kolb’s Learning Style Inventory was used because it remains one of the most influential and widely distributed instruments to measure individual learning differences (Kayes 2005) and has tested extensively in the literature (Marriott 2002).

**Data Analysis**

The Statistical Products for Service Solutions (SPSS) program was used for analysis of results and graphical representation in this study. The Chi-square test was used to determine the learning style preferences of the accounting students per level of study.

**RESULTS AND DISCUSSION**

The goal of this study was to investigate the learning style preferences used by accounting students at an institution of higher learning in South Africa. The results of the first research question that focused on the learning styles frequently preferred by accounting students are presented first. For this part, the interpretation and discussion of most preferred learning styles is presented.

<table>
<thead>
<tr>
<th>Accommodators</th>
<th>Divergers</th>
<th>Converters</th>
<th>Assimilators</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.59</td>
<td>19.77</td>
<td>29.49</td>
<td>24.15</td>
</tr>
</tbody>
</table>

Table 1 shows the learning styles for all participants in order of preference among the 232 students. The Convergers seem to dominate by twenty-nine percent, followed by the Accommodators by 26.59 percent, followed by the Assimilators at 24.15 percent and finally the Divergers by 19.77 percent. Thus, with all levels’ values combined, it can be noted that there were mostly Convergers and the least popular group was that of Divergers. Putintseva (2003) describes the convergers as people who favour Abstract Conceptualization and Active Experimentation and also use their learning to find solutions to practical issues. He further states that they (convergers) prefer technical tasks and are less concerned with people and people with a converging style like to experiment with new ideas, to simulate, and to work with practical applications. This finding is supported by Warn (2009) who observed that the convergers were dominating among the students who were doing accounting. He describes the convergers as people who rely on logical reasoning rather than feelings when making decisions. The findings of this study are also in line with the findings of a study conducted by Baker et al. (1986). In their study of the learning style preferences of the accounting students they observed that the majority of students were con-
The results further reveal that the least preferred learning style by this group of students is the Diverger. Divergers are the people who favor Concrete Experiencing and Reflective Observation learning dimensions (Kolb 1981). According to the literature on learning styles, this learning style preference is not popular among the accounting students.

The second research question focused on whether the learning style preferences of the accounting students differed according to the level of study. Since this question tests relationship of variables that are not dichotomous the Crosstabs descriptive statistics that show the spread of relationships in columns and rows was used. The Pearson’s Chi-square test was used as a component of Crosstabs analysis.

Table 2: The relationship between learning style groups and levels of study

<table>
<thead>
<tr>
<th>Levels of study</th>
<th>Learning style groups (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assimilators</td>
</tr>
<tr>
<td>Level 1</td>
<td>24.90</td>
</tr>
<tr>
<td>Level 2</td>
<td>23.83</td>
</tr>
<tr>
<td>Level 3</td>
<td>23.53</td>
</tr>
</tbody>
</table>

The result displayed in Table 2 shows a significant rise in percentage of Divergers from 1st to 2nd year. In addition, Assimilators, Convergers and Accommodators decrease slightly from 1st to 2nd year. During 3rd year, all group percentages are constant. This means that the Convergers are predominant throughout all the levels as shown in Table 1. Table 1 further reveals that between the 2nd year and 3rd year of study, the students begin to settle and are familiar with the higher education environment as they become more confident in their learning style group that they settle and the percentages are constant. Thus, this study showed that there is a relationship between the learning style preference and levels of study. Such a relationship is mostly predominant between the 1st and 2nd year of study until the students settle in between the 2nd and 3rd year of study. This finding is supported by Tinto (2007). According to Tinto, the learning environment of an institution, in addition to that of the individual, also greatly influences the students’ learning styles. He makes an example of an institution that greatly enforces independent learning arguing that as the students go from 1st year to upper levels, trends are that one would see an increase in independent divergent learning; the opposite goes for an institution that encourages a lot of group work, lecturers always giving handouts, and so on. Tinto (2007) is of the opinion that students from such a university tend to constantly sit on the convergent scale of the learning groups. The idea that learning style preferences change over time is also echoed by Marriott (2010) who observed that the learning styles of the UK undergraduate students changed over time and which could be linked to the personal maturing of students. In addition, this tendency towards active learning styles is consistent with earlier research that suggested that accounting students are Convergers (McChlery and Visser 2009).

The third question pertains to whether the learning style preferences of the accounting students differ according to gender. Analysis of this data was done through first showing the gender distribution of all participants. This was done so as to determine the likelihood of biased data if one gender was significantly more represented than the other.

Table 3: Chi-square tests for variables learning style and gender

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-square</td>
<td>1.068</td>
<td>3</td>
<td>.785</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>1.069</td>
<td>3</td>
<td>.785</td>
</tr>
<tr>
<td>Linear-by-Linear Assoc.</td>
<td>0.000</td>
<td>1</td>
<td>.988</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>5472</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Table 3, the Chi-square test shows x=0.018, df=3. This indicates that no significant difference was found between male and female learning style preferences. Thus, gender did not determine the learning preferences of the students. This finding is supported by Jenkins and Holley (1991) who also utilized the Kolb’s Learning Style Inventory in a study of the accounting students’ learning style preferences. Their results indicated that learning style preferences between male and female students were not significantly different. The results further revealed that both men and females enrolled for accounting course 1 class preferred the assimilator learning style. The results of this study are also supported by the results of a study conducted by Cekiso (2011) on profiling learning style prefer-
ences of first-year university students. In his study, he observed that there was no significant difference between male and female students in their learning style preferences. However, the literature on learning style preferences has revealed that in some situations, gender plays a positive role in the students’ learning style preferences (Garland and Martin 2000; Chen 2008). Thus, such studies contradict the results of the current study.

**Implications for Teaching Accounting**

The findings of this study have implications for teaching accounting to the group of students under study and to other students in similar contexts. The lecturers’ knowledge of the different types of learning styles and the learning demands for each learning style preference can assist the lecturers tailor their teaching methods, classroom activities and assessment in order to cater for the needs presented by various learning style preferences. Another important implication raised in the findings of this study was that the majority of the students were convergent-oriented. This finding is of particular relevance to accounting educators as it provides some empirical evidence of widely expressed concerns that accounting students are convergers. Larkin-Hein and Budny (2000) argue that the most effective teaching approach for students who are convergers involves the instructor functioning as a coach, and hence, providing guided practice and feedback. Novin et al. (2003) add that convergers are active learners who prefer discovery-type inquiry and above all, interactive, not passive style. They further state that to facilitate accounting students’ learning, an instructor of accounting students should approach teaching from an objective approach, which allows students to learn by having them work on problems and cases that allow them to evaluate alternatives and arrive at answers logically. Therefore, the lecturers should organize classroom activities that facilitate the maximization of opportunities for these students to succeed academically.

It is hoped that after completing the survey the students will be aware of their learning style preferences. Merrill (2000) argues that knowledge of one’s learning styles can be used to increase self-awareness about their strengths and weaknesses. Therefore, this study is hoped to help lecturers in improving their teaching methods in order to match their students’ learning style preferences. Research in learning style preferences has revealed that balancing instructional methods and the students’ learning style preferences leads to an increased comfort level and willingness to learn among students (Sims and Sims 2006). According to Marriott (2002), the study of accounting involves both the consideration of conceptual and applied aspects of the subject. This involves both specific knowledge and skills and cognitive ability and non-specific skills. This means that the lecturers’ awareness of the various learning style preferences can make it possible for them to match the accounting course requirements with the relevant learning style preferences so that the students can become successful. Thus, it is important that the link between the features of the learning style preference and the benchmark requirements is made.

Another important finding in the study is that learning style preferences change over time. In this regard lecturers’ awareness is important so as to adjust their methods of teaching to suite the new dominant strategies. This change in learning style preference is linked to personal maturing of students and teaching styles employed by university lecturers (Marriott 2002). The change in the learning style preferences could also be attributed to the academic demands of the upper levels of accounting study. Marriott (2002) points out that based on the description of the accounting course already mentioned above, the convergers who prefer to deal with things rather than people and who respond best to situations where there is one correct answer find it difficult to use that learning style in the upper levels of the accounting study hence there is a slight move away from Convergers to Divergers by some students.

**CONCLUSION**

Based on the findings of this study one can posit that students have different strengths and preferences in the ways they absorb and process information, leading to different learning styles. This is a general trend as far as the literature in learning style preferences is concerned and accounting students are no exception. This study sought to investigate the learning style preferences used by accounting students at an
EXPLORING THE LEARNING STYLE PREFERENCES

institution of higher learning in South Africa in order to improve the quality of teaching and the learning process. The results of the study have revealed the importance of lecturers’ awareness of the learning style preferences of their students in order to accommodate a variety of learning styles in their teaching styles. The results also showed that the majority of students are Convergers. Therefore, it is important for lecturers to understand how such students absorb and process information. Based on the findings of the study it is also important that the lecturers train their students not to use a single learning style but a wide range of learning styles so as to match different teaching styles and classroom activities. The study emphasized the link between the features of the learning style preference and the benchmark requirements of the accounting course. If the two are in harmony, it is hoped that students would succeed academically.

REFERENCES


Merrill MD 2000. Instructional strategies and learning styles: which takes precedence? In: R Reiser, J Demp-


