Teaching styles versus learning styles in the accounting sciences in the United Kingdom and South Africa: a comparative analysis

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Abstract
Individuals learn in different ways, using several learning styles, but lecturers may not always present information and learning experiences that match students’ learning preferences. Mismatches between learning and teaching styles can lead to disappointment with the course of study, personal discouragement and underperformance.

The learning styles of 735 undergraduate Accounting students and the teaching styles of 46 lecturers from one United Kingdom and one South African university were empirically surveyed, using the Felder-Solomon Index of Learning Styles questionnaire to consider the students’ learning styles, and an adaptation of the questionnaire to analyse the lecturers’ teaching styles.

The study compared learning and teaching styles between two universities in two different countries and then examined possible matches/mismatches between learning and teaching styles. Little mismatch was found (p-values smaller than 0.3). Other results are discussed and recommendations are made in relation to understanding and meeting students’ learning needs and the needs of professional bodies.

Key words
Accounting Sciences
Comparative analysis
Learning styles
Matching of learning styles and teaching styles
Teaching styles

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1 Introduction

A learning style refers to a person’s preferred approach to learning. Students learn in different ways; and the approach they prefer may be an important determinant in their academic performance (Allinson & Hayes 1988). Students’ learning context is a broad term which encompasses a variety of student-related variables, such as learning styles on the one hand, and variables which educators can control on the other. Educators need to adopt approaches to teaching and assessment that enable students with different learning styles to learn effectively: lecturers need to create a suitable mix of different learning opportunities to ensure that the largest possible number of students can learn effectively. Identifying individual students’ learning characteristics may help educators to improve their course design and choose helpful and appropriate learning outcomes (Butler 1988), modes of delivery and assessment (Sangster 1996).

Teachers have in the past formed a target population for style-relevant educational research. Inspired by the notion that matching the learning styles of students and the teaching styles of lecturers could affect student learning outcomes, teachers have generally acted on research on student learning to improve teaching results. Teaching styles vary as much as learning styles do: tutors have different strengths and preferences with regard to how they develop an individual’s learning and learning style. A teaching style is a combination of teaching methods and techniques that a lecturer/teacher prefers in his/her teaching. Some lecturers lecture, others demonstrate or lead learners to self-discovery; some focus on principles and others on applications; some emphasise memory and others understanding (Felder, 2004).

With regard to research on learning styles, Duff (1998) has identified different agendas among the advocates of learning style measurement. One such agenda is matching an individual’s learning style preference to specific learning activities in order to improve learning outcomes, but also to counteract weaknesses in an individual’s learning style. In addition, modifying trainers' learning styles may help them to meet the needs of different students better. The ‘matching’ hypothesis considers the congruence between the learner and the lecturer and the subject matter (Hayes & Allinson 1996). A number of studies have hypothesised that a lack of ‘matching’ between preferred learning styles and the nature of the subject matter and teaching methods would result in lower motivation, poorer performance and perhaps in attrition (Felder & Silverman 1988). Several studies suggest that matching may be significantly more effective in creating a learning environment that is conducive to learning than mismatching. Ford (1995), Geiger (1992) and Riding and Douglas (1993) have found that learning outcomes were significantly affected when students were presented with learning materials that were either matched or mismatched with their learning style: learning in matched conditions is significantly superior to learning in mismatched conditions.

On the other hand, some researchers, for example, Rush and Moore (1991), argue that mismatching can help learners to overcome weaknesses in their cognitive styles, to develop a more integrated approach to their learning. Research shows that providing mismatches in teaching and learning styles can also stimulate learning and flexibility in learning (Kowoser & Berman 1996). Vaughan and Baker (2001) suggest that matching may lead to learners’ becoming bored. Educational tension, including mismatching, may stretch learners educationally.

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Much has been written and there is a long-standing debate on the relationship between teaching and learning styles and their impact on students’ performance. Ford and Chen (2001) note that numerous studies suggest that learning in matched conditions may, in certain contexts, be significantly more effective than learning in mismatched conditions. Liu and Reed (1994) suggest that understanding the variables associated with successfully matching learning styles may prove to have a significant impact on learning achievement. However, Zhang (2006) contends that the literature on teacher/student style match/mismatch contains somewhat ambiguous findings, some arguing the benefits of a match, whilst others contend that the effect of matching is insignificant.

Given that matching may affect learning effectiveness, this study seeks to consider the level of match/mismatch in students’ learning styles and lecturers’ teaching styles within the Accounting discipline, an area not previously researched for these characteristics. The research was motivated by a concern for apparent weaknesses in student learning. So, for example, in relation to higher cognitive levels of learning, the authors have noted that students experience problems relating to holistic and integrated learning, as well as with advanced problem-solving. In addition, thus far, there is an apparent lack of international comparative work regarding student learning; and such work may lead to improvements in students’ learning experiences. The learning styles of students and the teaching styles of lecturers in two universities, one in South Africa (University X) and one in the United Kingdom (UK) (University Y), were therefore compared. The two universities under review are similar in respect of their undergraduate and postgraduate teaching portfolios and research.

2 Problem statement

The following questions were explored in this study:

*Can lecturers accommodate students’ learning styles in their teaching in order to enhance the learning experience? Would the lecturers be helped to do so if they know the relationship between learning and teaching and can analyse the implications of this correlation?*

3 Research objectives

The primary objective of this study was to investigate the teaching styles of lecturers in the Accounting Sciences at two campuses and to compare these teaching styles with the learning styles of Accounting students at these two campuses. To meet this objective, the following secondary objectives were pursued:

- to review the current literature on the learning styles and teaching styles applicable to the Accounting Sciences;
- to compare the learning styles of Accounting students at all four year levels at two universities in two different countries (South Africa and the UK);
- to compare the teaching styles of lecturers in the Accounting sciences at two university campuses (X and Y) in two countries (South Africa and the UK); and
- to compare the matching of learning styles with teaching styles in the Accounting Sciences at two universities (X and Y) in two countries (South Africa and the UK).

The investigation has led to recommendations regarding the teaching styles of lecturers in the Accounting Sciences to help them to meet the learning needs of their students.
4 Hypothesis
The following hypothesis was tested:

If there is a mismatch between the teaching styles of lecturers and the learning styles of students, this mismatch can be reduced by alterations to lecturers’ teaching styles; and learning can be improved if the mismatch is reduced.

5 Research method
A literature study was undertaken on the different learning styles of students and the teaching styles of lecturers as well as on the matching of learning and teaching styles. A two-part empirical survey was done. The first part involved using Felder’s Index of Learning Styles (ILS) to establish learning styles among Accounting students (those studying in the chartered accountants’ and management accountants’ streams of the BCom and B Com Honours in South Africa and a BA in Accounting and Accounting Honours in the UK) at the first to fourth year levels at two universities, one in the UK and one in South Africa. The second part of the survey was undertaken at the same two universities and focused on the lecturers involved in the training of chartered accountants and management accountants. This part of the survey used an adaptation of Felder’s learning style questionnaire to establish the teaching styles of the lecturers. The questions set for the students were altered in order to gauge the lecturers’ teaching styles. For example, one of the original questions set for students asked the following:

When I am learning something new, it helps me to:

a  Talk about it; and
b  Think about it.

For lecturers this was reworded as:

When I am teaching something new, I would let my students:

a  Talk about it; and
b  Think about it.

6 Literature study
6.1 Learning styles
Two instruments have been used for Accounting students, namely Kolb’s (1976, 1985) Learning Style Index (LSI) and Honey and Mumford’s (1992) Learning Style Questionnaire (LSQ).

6.1.1 Kolb’s LSI
Kolb describes a four-stage cycle of learning which forms a continuum that learners move through over time, as depicted in Figure 1. The cycle starts with a Concrete Experience (CE) of an event, followed by Reflective Observation (RO), leading to Abstract Conceptualisation (AC) and then to Active Experimentation (AE). The instrument accompanying the model measures learners’ strengths and weaknesses in the four stages of the learning process. The model uses two axes, AC-CE and AE-RO. These axes reflect two basic dimensions of learning, and show how learners perceive and act upon new
information. Four different groupings are formed when students’ learning styles are plotted against the two axes:

- divergers, who combine concrete experience and reflective observation;
- assimilators, who combine reflective observation and abstract conceptualisation;
- convergers, who combine abstract conceptualisation and active experimentation; and
- accommodators, who combine concrete experience and active experimentation.

Evidence suggests that most Accounting students tend to be convergers – for example, the study by Baldwin and Reekers (1984).

6.1.2 Honey and Mumford’s LSQ

The LSQ was developed on the basis of Kolb’s cycle of learning; and the LSQ was designed to assess the strengths of four different learning styles: Activist, Reflector, Theorist and Pragmatist (these four styles correspond to Kolb’s AE, RO, AC and CE categories). *Pragmatists* enjoy trying out new ideas, theories and techniques to see if they work in practice; *reflectors* prefer to ponder their experiences, observing them from different perspectives; *theorists* try to adapt and integrate experiences into logical, complex theories, whilst *activists* act first and consider the consequences later. Each individual has a unique combination of the four styles. As with Kolb’s model, Honey and Mumford’s model uses two dimensions of learning, combining the four styles into bipolar dimensions, indicating individual preference for theory over a pragmatic approach, labelled prehension, and action over reflection, labelled transformation. The two models described are closely aligned, as is shown below.

**Figure 1 The Learning Style Models of Kolb and Honey and Mumford**

(Sadler-Smith 2001:208)
6.1.3 Felder’s Index of learning styles (ILS)

Cuthbert (2005) argues that there is evidence to suggest that the LSI and LSQ are unsatisfactory, and that there are serious problems with regard to their definition and implementation. In the current study, one further instrument was considered, namely Felder’s model of learning styles, which also has four dimensions: Processing (Active/Reflective), Perception (Sensing/Intuitive), Input (Visual/Verbal) and Understanding (Sequential/Global). Since Felder’s ILS has not been applied to Accounting students before, it was done in this study.

**Figure 2 Four categories of student learning**

![Diagram showing the four categories of student learning](source: Adapted from Felder and Silverman's model (1988))

The learning styles identified by Felder can be briefly described as follows:

- **Active/reflective dimension**: Active learners understand new information by doing something with it, while reflective learners prefer to think about new information before acting on it.

- **Sensing/intuitive dimension**: Sensing learners are concrete, practical and oriented towards facts and procedures, solving problems by well-established methods. They are uncomfortable with abstract and theoretical information. Intuitive learners prefer to discover possibilities and relationships themselves; and they are innovative in their approach(es) to problem-solving.

- **Visual/verbal**: Visual learners understand and retain information best when they see visual representations of course material, while verbal learners understand new information best through written and spoken words.

- **Sequential/global learners**: Sequential learners understand new information in linear logical steps, while global learners learn in large leaps and think holistically.

The active/reflective scale is somewhat similar to Kolb’s AE/RO dimension, and it focuses on transformation. Two further dimensions are similar to Riding and Reyner’s (1998) cognitive style analysis, and the sensing-intuitive style is closely related to the Myers-Briggs Type Indicator (Myers & Myers, 1980).

The Index of Learning Styles is a self-scoring instrument that assesses learning preferences in four dimensions. The questionnaire asks 44 questions. Of these, 11 relate to each of the four groupings above. The prescribed method of recording a score, which was...
applied in this study, is to subtract the (a) and (b) scores on each dimension from one another, leaving a score that is an odd number between -11 and +11. Score (a) represents the group on the left axis/side of Figure 2, namely active, sensing, visual and sequential, while Score (b) is represented by the group on the right axis/side of Figure 2, namely reflective, intuitive, verbal and global. Each student’s results can then be considered for each of the four categories of student learning on a scale between two extremes, as diagrammatically shown in Figure 2 above with the model of Felder and Silverman.

6.2 Teaching styles/strategies/methods
A teaching style is a combination of teaching methods and techniques that a lecturer/teacher prefers in his/her teaching. Van Hamburg (2006) mentions principles of good teaching, including encouraging student-lecturer contact and cooperative and active learning, and the need to respect diverse learning styles.

A number of teaching approaches have been developed. Attention has been given to the central focus of delivery – teaching styles can vary between a lecturer/teacher-centred approach and a student/learner-centred approach. Where a lecturer/teacher-centred approach is followed, that can lead to dependent learners. This is not a good model for professional development, but it can be very useful and appropriate in the early phases of learning when the learning skills are limited, because lecturers then have an opportunity to facilitate changes in students’ learning skills. A more student/learner-centred approach sees the lecturer/teacher’s role as organising and presenting information to groups of students, acting as a gatekeeper of knowledge, controlling students’ access to information and directing learning (Napoli 2004).

Another approach, and one that is broadly aligned with educational policy in South Africa, is the outcome-based approach. Acharya (2003) identifies the basic principles of outcome-based education as a clear focus on the required outcomes and designing backwards to the student experience to manage learning activities to achieve the required outcomes. In the Accounting Sciences, this approach is highly recommended because of the requirements of professional bodies.

A further approach that is of interest to this study was the problem-based approach, which is also outcome-driven. The University of Limburg in Maastricht (in the Netherlands) is one of the leaders in problem-based learning in the Economic and Management Sciences (Gijse laers & Keizer 1995:2). The approach can be implemented in various disciplines. The process uses ‘facilitators’ of learning as opposed to teachers/lecturers. Learning is then driven by posing challenging, open-ended problems, and students work in small collaborative groups to improve their critical thinking skills. This approach provides students with integrative and meaningful experiential learning.

6.3 Matching of learning and teaching styles
A variety of approaches have been taken in research on a link between student learning styles on the one hand and teaching styles on the other. Ford and Chen (2001) considered the area of matching of student and teacher styles. They argue that more information is needed on the learning styles of large numbers of students, complemented by research geared to generating new insights into the complex interactions between learners and educators. Their study has contributed to a number of previous empirical studies that
considered the matching/mismatching debate. There have been a number of such empirical studies. For example, Kember and Gow (1989) and Trigwell, Prosser and Waterhouse (1999) correlated teachers’ orientations to teaching and student approaches to learning. Zhang (2006) applied a Thinking Styles Inventory to students and teachers to test empirically what the impact of matching/mismatching on student achievement is. Spoon and Schell (1998) adopted a similar approach in an empirical study on aligning student learning styles with teacher styles. A student learning styles instrument was restated to shift the focus from the learner to the teacher. After testing for internal consistency and reliability, Spoon and Schell’s study (1998) was able to compare the two groupings.

Wijewardena and Cooray (1995) argued that there was a need for studies covering various aspects of Accounting education in different countries to consider alternative methods of education, in order to for universities to learn from each other. Comparative research as in Wijewardena and Cooray’s (1995) approach provides a starting point rather than an end in itself, inspiring further research (Kogan 1996). Teichler (1996) sees a comparative approach as broadening knowledge and challenging perceptions. Empirical studies have also been adopted in comparative studies on students in different geographical locations. So, for example, Booth, Luckett and Mladenovich (1999) compared the student learning styles at two universities in Australia using a study process instrument. Marriott (2002) has also compared the learning styles preferences of students at two UK universities using a learning style preference instrument. Obviously, in any comparative study, careful contextualisation is vital for an understanding of the findings in relation to the different locations and contexts.

7 Results

In this study, Felder’s ILS instrument was applied to first- to fourth-year Accounting students during the 2004/5 academic year at two universities, one in the UK and one in South Africa. (In South Africa, the academic year runs from January to December, but in the UK, the academic year runs from September to August.) During the 2005/6 academic year, a survey was conducted at the same universities of the lecturers in the Accounting Sciences, using Felder's questionnaire, adapted for lecturers. Although the two surveys did not take place at the same time, the same lecturers of the academic years surveyed were involved.

The questionnaire was handed to the population of all first- to fourth-year Accounting students at both campuses by the researchers themselves and a 100% response rate for all the students present was reported, which represents more than 70% of the registered students. The Statistical Consultancy Services at the South African university were responsible for the processing of the excel files which the researchers prepared from the responses on the questionnaires of all the Accounting students, distinguishing between the different academic years.

Tuckman (1999) suggests that a Cronbach alpha of 0.5 or greater is acceptable for instruments that measure attitude assessments. The comparison of the Cronbach alpha for the two universities (on the student questionnaire) in two different countries is shown in Table 1. It should be noted that all readings were above the 0.5 criterion, except for the sequential/global dimension, which shows a weakness in the internal validity of this criterion. This weakness is consistent with findings by Bacon (2004) and Van Zwanenburg, Wilkinson and Anderson (2000). Table 2 shows the internal validity of the questionnaire.
for the lecturers. It is clear that all areas have a Cronbach alpha above 0.5, except for the active/reflective dimension for the UK. However, when the returns by both countries are combined, they do achieve the 0.5 criterion.

Table 1  Comparison of the Cronbach alpha for the two universities (Student questionnaire)

<table>
<thead>
<tr>
<th></th>
<th>University X</th>
<th>University Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active/Reflective</td>
<td>0.50</td>
<td>0.53</td>
</tr>
<tr>
<td>Sensitive/Intuitive</td>
<td>0.60</td>
<td>0.63</td>
</tr>
<tr>
<td>Visual/Verbal</td>
<td>0.63</td>
<td>0.66</td>
</tr>
<tr>
<td>Sequential/Global</td>
<td>0.45</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Table 2  Comparison of the Cronbach alpha for the two universities (Lecturer questionnaire)

<table>
<thead>
<tr>
<th></th>
<th>University X</th>
<th>University Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active/Reflective</td>
<td>0.55</td>
<td>0.43</td>
</tr>
<tr>
<td>Sensitive/Intuitive</td>
<td>0.75</td>
<td>0.79</td>
</tr>
<tr>
<td>Visual/Verbal</td>
<td>0.61</td>
<td>0.82</td>
</tr>
<tr>
<td>Sequential/Global</td>
<td>0.60</td>
<td>0.69</td>
</tr>
</tbody>
</table>

Table 3 contains a comparison between the learning styles of accounting students from Year 1 to Year 4 of the two universities. In reading these tables, the following should be noted:

- Columns 2 and 3, with the figures (Bal.%), contain the percentage of the learners with a preference of -3 to +3 on a scale of -11 to +11. This implies that the learners are balanced for the learning style of, for example, active and reflective.
- Columns 4 and 5 (Group ‘a’) contain the information on the percentage of the learners who prefer active, sensing, visual and sequential learning styles. They scored between 5 and 11 on each of the respective four scales.
- Columns 6 and 7 (Group ‘b’) contain the information on the percentage of the learners who prefer a reflective, intuitive, verbal and global learning style. They had a score of -5 to -11.

Table 3  A comparison of the student learning styles at the two universities

<table>
<thead>
<tr>
<th>Students</th>
<th>X = 469</th>
<th>Y = 266</th>
<th>Bal.% X</th>
<th>Bal.% Y</th>
<th>a=% X</th>
<th>a=% Y</th>
<th>b=% X</th>
<th>b=% Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active/Reflective</td>
<td>65.95</td>
<td>60.15</td>
<td>21.41</td>
<td>28.95</td>
<td>12.63</td>
<td>10.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensing/Intuitive</td>
<td>33.76</td>
<td>35.34</td>
<td>62.61</td>
<td>59.77</td>
<td>3.63</td>
<td>4.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual/Verbal</td>
<td>46.90</td>
<td>45.86</td>
<td>46.80</td>
<td>47.74</td>
<td>6.42</td>
<td>6.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sequential/Global</td>
<td>67.95</td>
<td>60.90</td>
<td>24.15</td>
<td>34.21</td>
<td>7.91</td>
<td>4.89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 is identical in format to Table 3, but it reflects the teaching styles of the lecturers at the two universities.
Table 4  A comparison of the teaching styles of lecturing staff at the two universities

| Lecturers and students | University X | | University Y | |  |  |  |  |  |  |
|------------------------|--------------|---|---|---|---|---|---|---|---|
|                         | X = 24 | Y = 22 | X = 24 | Y = 22 |
| Active/Reflective       | 58.33 | 72.73 | 29.17 | 27.27 | 12.50 | 0 |
| Sensing/Intuitive       | 50.00 | 45.45 | 33.33 | 31.82 | 16.67 | 22.73 |
| Visual/Verbal           | 39.13 | 36.36 | 56.52 | 45.45 | 4.35 | 18.18 |
| Sequential/Global       | 70.83 | 59.09 | 8.33 | 13.64 | 20.83 | 27.27 |

Table 5 allows a comparison of the different styles adopted by the students and the lecturers at the two universities. The same format is adopted as in Tables 3 and 4 above.

Table 5  Comparisons of the student learning styles and the staff teaching styles at the two universities

| Lecturers and students | University X | | University Y | |  |  |  |  |  |  |
|------------------------|--------------|---|---|---|---|---|---|---|---|
|                         | X = 24 | Y = 22 | X = 24 | Y = 22 |
| Active/reflective       | 58.33 | 65.95 | 29.17 | 21.41 | 12.50 | 12.63 |
| Sensing/intuitive       | 50.00 | 33.76 | 33.33 | 62.61 | 16.67 | 3.63 |
| Visual/verbal           | 39.13 | 46.90 | 56.52 | 46.68 | 4.35 | 6.42 |
| Sequential/global       | 70.83 | 67.95 | 8.33 | 24.15 | 20.83 | 7.91 |

Because a population was used and not a random sample, a further analysis was made by comparing the learning styles preferred by each consecutive year’s Accounting students at the UK university with those preferred by the respective year’s Accounting students at the South African university. This comparison was accomplished by means of two-way tables to determine Cohen’s (1988) effect sizes by way of the phi coefficient. Table 6 contains the information on all these comparisons of all four years for all the learning style categories.

Table 6  Cohen’s effect sizes (phi coefficient)

<table>
<thead>
<tr>
<th>Learning styles</th>
<th>First year</th>
<th>Second year</th>
<th>Third year</th>
<th>Fourth year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active/reflective</td>
<td>0.1116</td>
<td>0.1345</td>
<td>0.0557</td>
<td>0.0612</td>
</tr>
<tr>
<td>Sensing/intuitive</td>
<td>0.0574</td>
<td>0.1328</td>
<td>0.1019</td>
<td>0.0835</td>
</tr>
<tr>
<td>Visual/verbal</td>
<td>0.0579</td>
<td>0.1231</td>
<td>0.1815</td>
<td>0.1384</td>
</tr>
<tr>
<td>Sequential/global</td>
<td>0.2256</td>
<td>0.0757</td>
<td>0.0896</td>
<td>0.2025</td>
</tr>
</tbody>
</table>

In terms of Cohen’s (1988) effect sizes, effect sizes of p = 0.1 are classified as a small effect and p = 0.3 as a medium effect. All the above figures, as reported in Table 6, show less than a 0.3 effect. This means that there is no significant difference between the respective years’ Accounting students at the two campuses.
Likewise an analysis was done comparing the preferred teaching styles of the lecturers at the two campuses. Table 7 contains the information on the comparison of the teaching styles preferred by lecturers at the two campuses (24 lecturers at University X and 22 lecturers at University Y). Table 8 contains information on the comparison of the lecturers’ teaching styles versus the students’ learning styles at both universities.

Table 7  Cohen’s effect sizes (phi coefficient) – lecturers in the Accounting Sciences at both universities

<table>
<thead>
<tr>
<th>Teaching styles:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Active/reflective</td>
<td>0.2608</td>
</tr>
<tr>
<td>Sensing/intuitive</td>
<td>0.0771</td>
</tr>
<tr>
<td>Visual/verbal</td>
<td>0.2226</td>
</tr>
<tr>
<td>Sequential/global</td>
<td>0.1267</td>
</tr>
</tbody>
</table>

Table 8  Cohen’s effect sizes (phi coefficient) – lecturers and students compared at both universities

<table>
<thead>
<tr>
<th>Teaching/Learning styles</th>
<th>Lecturers</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Active/reflective</td>
<td>0.0412</td>
<td>0.1011</td>
</tr>
<tr>
<td>Sensing/intuitive</td>
<td>0.1688</td>
<td>0.2179</td>
</tr>
<tr>
<td>Visual/verbal</td>
<td>0.0425</td>
<td>0.1222</td>
</tr>
<tr>
<td>Sequential/global</td>
<td>0.1188</td>
<td>0.2506</td>
</tr>
</tbody>
</table>

All the above figures, as reported in Tables 7 and 8, are smaller than 0.3 and therefore have a small effect, meaning that there is no significant difference between the teaching styles of lecturers in the Accounting Sciences at the two universities under review or between the matching between the students’ learning styles and the lecturers’ teaching styles at the two universities.

8 Conclusions

8.1 Student learning styles (see Table 3)

With regard to the active/reflective dimension, the Accounting students’ learning style preferences reflect that the majority of students at the South African university and those at the UK university’s learning style was balanced and that the remainders’ preferences were skewed towards an active learning style. This finding is consistent with earlier research which suggested that Accounting students tend to be convergers. With regard to the sensing/intuitive dimension, the majority of learners preferred a sensing learning style. A balance between a sensing and intuitive learning style was their second choice. The intuitive learning style was ranked last on both campuses. With regard to the visual/verbal dimension, it would appear that as many students preferred a balance between visual and verbal learning as preferred a visual approach, and only a few preferred a verbal learning style. With regard to the last group of learning styles, namely a sequential/global learning style, the majority of students preferred a balance between the two learning styles, with a significant number preferring sequential learning and a minority preferring a global learning style. In respect of the ‘B’ categories (reflective, intuitive, verbal and global), it was noted that these were in the minority for all learning styles.
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8.2 Lecturers’ teaching styles (Table 4)
Lecturing staff at both campuses preferred a balanced approach in the active/reflective dimension, with the remainder skewed towards an active style on both campuses. With regard to the sensing/intuitive dimension, the majority preferred a balanced approach, with the remainder predominantly selecting a sensing style. The majority of staff at both universities selected a visual approach as their preferred style of teaching, with the remainder preferring a balance between a visual and verbal approach. With regard to the sequential/global dimension, the majority of the lecturers at both universities showed a preference for a balanced approach, with the remainder predominantly preferring a sequential style. Curiously, the findings also show that staff prefer a focus on the lower level (‘a’) categories, when one might have been expected that they would have preferred higher level categories.

8.3 Comparisons between the countries
Tables 6 and 7 show Cohen’s effect sizes and the following conclusions can be drawn:

- In the comparison of the responses of the students of Universities X and Y (Table 6), none of the effect sizes reached a p-value of 0.3, which indicates that the effect is less than medium; thus there is no significant difference between the learning style preferences of the respective years’ Accounting students at Universities X and Y.
- In the comparison between the responses of the lecturers in the Accounting Sciences at Universities X and Y (Table 7), little difference was noted (p-values were smaller than 0.3) between the teaching styles of the lecturers at the two universities.

8.4 Matching of teaching and learning styles
In the comparison between the preferred teaching styles of the lecturers in the Accounting Sciences and the preferred learning styles of the Accounting students at the two universities (Table 8), no significant difference was noted (p-values were smaller than 0.3). This effect, which is smaller than a medium effect, shows that there is a good match between the students’ preferred learning styles and the lecturers’ preferred teaching styles.

Table 5 clearly shows that, overall, the students’ preferred learning styles are very clearly matched with the teaching styles at both universities, although the factors above 0.2 (Table 8) might raise some interest (the sensing/intuitive dimension and the sequential/global dimension in the UK), as a mismatch might make learning opportunities more interesting.

At the South African university, there were few differences in the match between teaching and learning styles. However, for the sensing/intuitive dimension, lecturers preferred a balanced style, whilst the majority of students preferred a sensing style (Table 5). Also, while very few students preferred an intuitive style, 16.7% of the lecturers opted for this style. The majority of lecturers preferred a visual approach, but the students were split between a preference for a balance between a verbal and a visual approach and a preference for a visual approach. With regard to the results other than the majority viewpoints, there was a slightly higher preference among lecturers for an active learning style and among students for a more sensing style than in the active/reflective dimension. Likewise, regarding the sequential/global dimension, students preferred a sequential style, while lecturers preferred global learning.
At the UK university, there were few differences in the match between teaching and learning styles. However, for the sensing/intuitive dimension, the highest scoring category was a balanced approach for lecturers, while the majority of students preferred a sensing style. It should be noted that students scored intuition very low, whilst the lecturers scored it relatively high (22.7%, Table 5). This is consistent with the slightly high Cohen phi coefficient of 0.2179 in Table 8. A significant percentage of lecturers preferred a visual style (18.2%), but few students preferred this style. In terms of the sequential/global dimension, the second highest dimension for students was a sequential style, while for the lecturers it was a global style, consistent with the slightly high Cohen phi coefficient of 0.2506 in Table 8.

9 Recommendations

Zhang (2006) contends that, given the complexity of the relationship between students and teaching styles and the effect of a match/mismatch on students’ achievement, teachers are advised to understand their students and the subject matter that they teach better. Recognition of these different approaches is critical to effective education, yet often educators remain in ignorance of their own teaching styles, and they are even more ignorant of their students' learning approaches. It is not possible for lecturers to match each learner’s learning style, but improvements can be made to the effectiveness of teaching and learning when lecturers do understand the different learning styles and plan the learning environment to create an opportunity for the success of each learner, whether through matching or mismatching. The following recommendations emanate from the study:

- One of the key findings of the study has been to identify Accounting students’ learning styles by means of an empirical instrument. The study has shown a significant skewing towards active, sensing, visual and sequential learners. Lecturers need to reflect on whether they match these identified styles with appropriate teaching methodologies. For example, matching can be achieved for active learners by means of interactive study guides and promoting group work; for visual learners, lecturers need to offer the learning content by way of diagrams, etc. Where mismatching occurs, lecturers should be aware of this and should be able to provide an accountable rationale for selecting this approach.

- The study’s finding that students do not prefer reflection, intuition, verbal and global learning styles may not be important if this preference is not reflected in their achievement of the learning outcomes of the programme of study. However, the authors would be concerned if Accounting students were to be incapable of applying or reticent to apply these learning styles. In an environment where problem solving and holistic thinking are required skills, it would appear to be essential that learners are able to apply the results of adopting these deeper learning styles (for example, they should be able to write reports and solve complex problems by the end of the course). Lecturers should foster the adoption of these learning styles by students, especially at the senior levels.

- The findings show that students prefer a balanced approach. This implies that lecturers should adopt a balanced teaching approach in order for all learning objectives to be met. This could mean that a mix of teaching methodologies needs to be adopted, but there also needs to be a realisation that different methodologies stimulate different learning styles at the same time; for example, case studies may be useful for sensing students and...
they may also provide deeper learning through a holistic approach, but group work often stimulates both reflection and action.

The teaching styles of the lecturers at the two universities were found to be similar. However, it was interesting to note that there was little preference for teaching higher learning skills. This seems incongruous in the light of the ongoing concern that Accounting students display some weaknesses in holistic thinking, and lack deep (as opposed to surface) learning and problem-solving skills. In future, the requirements of accountancy professional bodies and of employers may force lecturers to change to these higher level skills.

With regard to the match between teaching and learning styles, the study showed that there is little difference between these approaches. Lecturers offer teaching that matches what the students have indicated to be their preferred learning styles. However, this type of thinking may go against some educationists’ thinking, in that a variety of learning skills may strengthen students’ abilities to adapt to future learning experiences.

Where differences of some magnitude did exist, for example, on the UK campus, there is a slight mismatching in the global sequential dimension; teaching staff should reflect on the appropriateness of that mismatch.

Although there is clear matching between student learning styles and teaching styles, there is a need to understand how lecturers link their teaching approaches to the students’ learning style preferences. It is one thing to have a preference for a style and another to translate that into approaches that incorporate such a style. This is an area for further research.

Further research could also be undertaken into how the higher level learning and teaching styles are being embedded in Accounting education, as well as the need for more conceptual work on understanding how these are linked to the achievement of learning outcomes.

Bibliography


Teaching styles versus learning styles in accounting sciences in the UK and SA: a comparative study


