“The relationship between learning styles and learning methods in the South African workplace”

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The relationship between learning styles and learning methods in the South African workplace

Abstract

This article is based on a study which set out to better understand the relationship between learning styles, as defined by Kolb (1994), and learning methods in the South African workplace. While past research on this topic has predominantly been limited to college populations this study extended the research on the relationship between learning styles and learning methods in the context of the workplace. Data was gathered among a population of organizations in the greater Johannesburg area. The results of the research suggest that there is a weak relationship between learning styles and learning methods in the workplace. This result is quite unexpected, given the strong evidence that supports this relationship in college populations. The article goes on to propose that as learners in the workplace have a greater opportunity to apply their learning when compared to college learners, the relationship between learning style and learning method will be weaker. It concludes that the choice of learning method in the workplace was not generally critical to effective learning delivery.

Keywords: learning styles, learning methods, South African workplace.
JEL Classification: M53.

Introduction

While much research has been conducted in the field of learning styles and learning method preferences, most of this research has focused on the college population in foreign countries. The study, forming the basis of this article, focuses on the relationship between learning styles, as defined by Kolb's learning style inventory version 3 (1999a), and learning methods in the South African workplace context. It tries to answer the following two questions:

1. Do particular learning styles result in a preference for particular methods of learning in the South African workplace?
2. Are learning method preferences in the South African workplace consistent with the learning style theory of Kolb (1984)?

The training and development of employees is an important element in many successful organizations. Training and development is important not only for the growth and development of the employee but is also critical to the long-term success of the organization. Correl & Gregoire (1998) state that: "To be successful, organizations must continually learn. Organizations that learn are competitive. They are on the leading edge. They create their own futures instead of being created by their futures". Learning within the workplace is thus important for the long-term success of businesses.

Young, Klemz & Murphy (2003) observe that there were distinct variations among individuals in how knowledge was acquired, skills developed and abilities refined. One of the reasons for these differences has been learning style variations among individuals. Dunn (1984, p. 12) defined learning styles as "the way each person absorbs and retains information and/or skills". Research by Gadzella, Stephens & Baloglu (2002), Miller, Always & McKinley (1987) and Schmeck, Ribich & Ramanaiah (1977) shows that learning styles are important, and that success at college is strongly influenced by learning style. Given this along with the fact that learning is important to organizations, it would be of value to understand the impact of learning styles on learning in the workplace, and the relationship between these styles and learning method preferences.

In many organizations a generic approach is taken when choosing learning methods, and individuals are trained the same way irrespective of their individual learning style. While many different methods of learning are available, organizations do not necessarily choose the most appropriate learning method for an individual.

1. Literature review

The literature review initially provides some context to the study by reviewing basic concepts in learning. In order to identify learning methods common to the workplace, a review of literature in this field was conducted, which identified current research on the relationship between learning styles and learning methods, thus, formulating a theoretical framework within which the research propositions are developed.

As an introduction to learning theory Driscoll (1994) defines learning as a pertinent change in human performance or potential. Hergenhahn &

Olson (1993) define learning as a relatively permanent change in behavior as a result of reinforced practice. Schwen, Kalman, Hara & Kisling (1998), on the other hand, define learning as a process of acquiring knowledge. With reference to the workplace, Yi (2005) defined learning as the acquisition of knowledge and skills for the purpose of improving job performance. Given the above definitions, two common themes evolve: namely that learning involves the acquisition of knowledge and that this acquired knowledge results in a change in the individual, be it human potential or behavior.

Gravett (2005) differentiates between rote and meaningful learning, where: "One involves the short-term acquisition of single, somewhat contrived concepts, the solution of artificial problems, or the learning of arbitrary association… The other consists of the long-term acquisition and retention of the complex network of interrelated ideas characterising an organised body of knowledge that learners must incorporate into their cognitive structures". Traditional views of learning characterised it as the passive transfer of knowledge from teacher to student (i.e. rote learning). Gravett (2005) indicates that pieces of information that memorized are easily forgotten, while pieces of information that make sense to the learner are organized in such a way that they are more easily remembered and applied. Modern views on learning tend to support meaningful learning over rote learning. A number of theories exist on the topic of meaningful learning, the most prominent of which is constructivism.

According to Gravett (2005), constructivism is not a single theory but rather a collection of related views (i.e. radical constructivism, sociocultural constructivism, emancipatory constructivism and social constructivism). All these views on learning, however, evolve from the basic concept that learning is a process of constructing meaning from the learners' interaction with the world. Thus learners are, not passive beings that respond to stimuli, nor is learning the perceiving and recording of knowledge, rather, learning is an active process, where meaning is constructed and transformed during interactions with the environment.

In the workplace, the learners are adults. Adult learning is quite different from pre-adult learning. Dinmore (1977) gives detailed accounts of these differences with perhaps the most fundamental difference between adult and pre-adult learning. There is the experience that adult learners bring to learning. This experience allows adult learners to make connections more readily between theory and real world application. Further key differences between adult and pre-adult learning is the role it plays, the manner in which it takes place and its formality. Adult learning plays a secondary role, takes place collaboratively and is more informal, and is described as "the lifelong process whereby every individual acquires attitudes, values, skills and knowledge from daily experience, educative influences and resources in his/her environment − from family and neighbours, from work and play, from the market place, the library and mass media" (Titmus, 1989, p. 547). This, in comparison to pre-adult learning which plays a primary role in pre-adult life, takes place largely individually, and is defined as "the structured, chronologically ordered education provided in primary and secondary schools, in universities and specialised courses in full time technical and higher education" (Titmus, 1989, p. 547).

Learning styles, as defined by Dunn (1984, p. 12), are "the way each person absorbs and retains information and/or skills". Kolb (1984) defined learning styles as categories to classify learners based on their customary approach to perceiving and processing data. These two definitions are largely similar and imply that people employ particular strategies when they learn; strategies that differ depending on the learning style. Extensive research has been undertaken in the area of learning styles and a number of learning style measures have been developed. Schugurensky (2004) defined learning style measures to fall into three categories: perceptual modalities, information processing and personality factors. Perceptual modalities refer to those learning styles that are based on physiological factors such as auditory, visual, tactile, etc. Information processing styles focus on how information is perceived, processed, organized, stored and recalled. Finally, personality factors involve affective components of the learner including motivation, values, emotional preferences and decision styles.

A number of researchers (Bargar & Hoover, 1984; Dunn, 1984; Hayes & Allinson, 1994; Sadler-Smith & Riding, 1999 and Witkin, Moore, Goodenough & Cox, 1977) have found evidence which suggests that learning style and learning method preferences are related. Bargar & Hoover (1984), for example, found that instructional preferences varied according to individuals' Jungian psychological type. Sensing types preferred instructional methods that involved direct experience and that had practical outcomes, while intuitive types opted from global concepts and open instructional formats.

As can be seen from the above, there are a large number of different learning style theories and learning style inventories in circulation, however, this research was limited to the learning style theory of Kolb (1984) and to the learning style inventory defined by Kolb (1999a), termed the learning style inventory version 3 (LSI 3).

1.1. Kolb's learning style theory. Sproles & Sproles (1990) observe that Kolb's theory is derived from many theoretical foundations, including psychological theories of Jung, cognitive theories of Piaget, social psychology of Lewin and the experience-based learning theory of Dewey. Kolb (1984) considered learning styles to be based upon how people perceive and process information. This gave rise to two continuums: the approach to a task (the doing/watching continuum, also known as the active experimentation/reflective observation continuum) and the emotional response (the thinking/feeling continuum, also known as the abstract conceptualisation/concrete experience continuum).

Four modes of learning could, thus, be identified:

1. **Active experimentation (AE)** – emphasises doing above watching. Practical application is more important than reflective understanding.
2. **Reflective observation (RO)** – emphasises watching over doing. Observation and understanding are more important than practical application.
3. **Abstract conceptualisation (AC)** – emphasises thinking over feeling. The building of general theories is more important than intuitive understanding.
4. **Concrete experience (CE)** – emphasises feeling above thinking. Understanding complexity and uniqueness of the current situation is more important than theories and generalisations.

Sandmire & Boyce (2004) note that an expert learner can function in all four learning environments and that the scientific method of inquiry requires one to function sequentially in all four environments starting with observing phenomena, i.e. concrete experience.

Given that Kolb's approach to learning styles was based upon how people perceived information (CE versus AC) and processed information (AE versus RO), four learning styles could be identified. White (1992) summarised these learning styles as:

1. **Accommodators** – prefer concrete experience and active experimentation. Their strength lies in doing things. They do well in situation, where they must adapt to immediate circumstances. They solve problems in an intuitive trial and error manner.
2. **Divergers** – prefer concrete experience and reflective observation. Their strength lies in imagination and the ability to see situation from multiple perspectives. They do well at identifying many problems from multiple perspectives. They do well at identifying many problems and opportunities and generating ideas about these.
3. **Assimilators** – prefer abstract conceptualisation and reflective observation. They are very good at creating theoretical models and reasoning inductively. They are more concerned with abstract concepts that with people or practical theories.
4. **Convergers** – prefer abstract conceptualisation and active experimentation. Their strength lies in the practical application of concepts. They prefer working with things rather than people and are action orientated.

Research has shown that there is a link between learning style and learning activity in that, depending on learning style, individuals will engage in the same habitual learning activity (Hayes & Allinson, 1994; Hayes & Allinson, 1996; Sadler-Smith & Riding, 1999; Currie, 1995). This finding is important because it implies that for a given learning style, a preference will exist for a learning method which will result in improved learning (Dunn, Griggs, Olson, Gorman & Beasley, 1995; Alberg, Cook, Friend & Sano, 1992; Hays & Allinson, 1996; Lovelace, 2005; Simon, 2000; Rochford, 2004; Young, Klemz & Murphy, 2003). Further, Farkas, 2003, in a review of literature pertaining to learning styles, found, there was evidence to suggest that when learning methods are congruent with learning style, then improved learning takes place. A large body of evidence, thus, exists to suggest that improved learning will take place if learning style and learning methods are aligned.

While much evidence exists that suggests that improved learning takes place when learning style is supportive of learning method, the vast majority of these studies, though, have been conducted on student populations. Little work has been done on the relationship between learning style and learning method preferences in the workplace. With the exception of the research of Buch & Bartley (2002), all other research found on the subject has focused on student populations.

It seems intuitively logical to propose that if a relationship exists between learning styles and learning methods in the student population, then this rela-

tionship will also exist in the workplace. However, learning in the workplace is fundamentally different from learning at colleges, in that it is adult based and informal, versus the pre-adult and formal learning that takes place in colleges. Hence it is desirable to further understand the relationship between learning styles and learning method preferences in the workplace.

Read & Kleiner (1996) propose that there are two key requirements for learning to take place. Firstly, there needs to be active participation by the learner. Learning will not take place simply because information is presented to the learners; the learners must be involved in the learning. Secondly, the learner will learn more if the learning is followed by positive reinforcement such as praise from the trainer or alternatively internal satisfaction. Read & Kleiner (1996) reviewed the results of a 1994 Lakewood Research and Training Magazine survey in the top ten training methods used in businesses. It is to be noted that "The use of an effective training method does not guarantee that the training will be effective" (Read & Kleiner, 1996, p. 28). As these learning methods are by no means exhaustive, and with such an array of learning methods available the next question is, which are the most appropriate? There are many factors that influence the appropriateness of the learning intervention. Read & Kleiner (1996), for example, propose that learning methods that promote learner participation and positive reinforcement are better learning methods. The large body of evidence reviewed earlier in this article indicates that the right learning methods depends very much on the individual's learning style. Thus, we seek to understand how learning styles (as defined by Kolb's LSI 3) affect preferences for specific learning methods.

Buch & Bartley (2002) reviewed past research in the area of learning styles and proposed certain preferences for the different learning styles as well as investigating the relationship between Kolb's LSI 2 and training methods which indicated that workplace learners did indeed have a preference for particular training methods, depending on their learning style. Svinicki & Dixon (1987) provide guidelines for teaching to each of Kolb's learning modes.

2. Research methodology

2.1. Research population. The research population consists of people with a minimum of a Grade 12 (matriculation certificate) level of education, working for a variety of organizations such as financial services, industry, healthcare and education in the greater Johannesburg region. The research population was selected to ensure that it was diverse in terms of profession, educational qualification (these are important as learning styles have been found to correlate the choice of profession and field of study (Kolb, 1984)) as well as gender and race. Even though the author has found no evidence to suggest that learning styles have a racial or gender bias this is a precautionary step.

2.2. Sample size. Gay (1996, p. 125) suggested that if the population size is less than 100, then the whole population must be surveyed, and if the population is around 500 then 50% of the population should be surveyed. In this study the estimated research population size was 300, therefore a sample size of 150 was sought.

In total, 109 responses out of a population of 233 were obtained, giving a sample fraction of 47%. The achieved sample fraction is sufficiently large as to be deemed representative of the population.

2.3. The questionnaire. The sample was randomly selected from the various organizations. Respondents were required to complete a three part questionnaire. The first section of the questionnaire dealt with general demographic data regarding the individual which included organization name, educational qualification, profession, work experience in years, race and gender. The second section evaluated the learning style of the individual as per Kolb's (1999a) LSI 3. This involved 12 sentences, each with 4 different endings which had to be ranked according to how well the respondent felt that each one fitted with how they would have gone about learning something. This was then scored and a learning style allocated as per White's (1992) summary. The final section of the questionnaire established the individual's preference for various learning methods which were determined by the individual's response to the following question: "If learning is the acquisition of skills and knowledge that improve job performance, how effective is this learning method in helping you to learn?" Respondents were required to rank each learning method in response to the above question, on an ordinal scale, where 1 was the least effective and 5 the most effective. Allowances were made for the respondents to indicate if they had not been exposed to any particular learning method. The methods are detailed in Table 1.

Table 1. Training methods assessed

	Training methods
1.	Learning through representing or speaking out for others e.g., learning about company policies and procedures while representing a colleague in a dispute
2.	Learning using audio tape material
3.	Leaning through problem solving
4.	Learning from "one-on-one instruction"
5.	Learning using computer-based training i.e. interacting with a computer program designed to help teach you something
6.	Learning from videotape material
7.	Learning from slides i.e. from a presentations or lecture
8.	Learning from case studies
9.	Learning by interacting with others e.g., by interacting with a friend who is an expert on financial investing and you learn about financial investing
10.	Learning by role-playing
11.	Learning by reading e.g., newspapers, books, journals
12.	Learning from film material
13.	Learning through practicing continuous improvement i.e. using feedback from others to guide your future actions or behaviors
14.	Learning from games and simulations e.g., playing a business simulation game in order to understand how a business operates
15.	Learning from lecture-type interactions
16.	Learning through observing others actions and/or behaviors
17.	Making mistakes and learning not to repeat them
18.	Learning through offering leadership to others
19.	Learning by applying previously learnt theory e.g., applying theory learnt at university in the workplace
20.	Learning by receiving personal coaching or personal mentoring

2.4. Reliability and validity of the measurement tools. Kolb, Mainemelis & Boyatzis (2002) reviewed criticism of Kolb's LSI. The initial LSI published in 1976 has had two improved versions thereafter culminating in LSI 3. Here improvements focused on internal consistency and test retest reliability. Boyatzis & Kolb (2002) go on further to note that the LSI has been criticised for its forced choice method and ipsative scaling. The forced choice method has been shown by several researchers to effectively address problems associated with the free choice method (social desirability, leniency, severity and acquiescent response sets). Forced choice methods often provide ipsative measures, i.e. measures that force the summed scores for each individual to be the same. Ipsativity results in spurious negative correlations between items, negating the use of statistical analysis. Ipsative measures can be transformed under certain conditions to non-ipsative measures. The four scores for AC, CE, AE and RO are ipsative, but the scores of AC-CE and AC-RO are not ipsative.

The basis for the learning methods questionnaire was the work of Read & Kleiner (1996) on popular instructional methods and Gerber (1998) on ways people learn at work. The learning methods questionnaire seems to have face and content validity however, reliability has not been experimentally established.

2.5. Data analysis. The independent variable in this research was learning style. The measure of learning style was obtained from Kolb's LSI 3 tool (1999a). Two primary dimensions were created by subtracting the scores of CE from AC, creating the AC-CE scale while the AE-RO dimension was created by the difference between AE and RO. Thus, each of the four learning styles are scored but as each respondent can only belong to one level of independent variable the experimental design is one of between-subjects.

The dependent variable in this research was learning method preference which was obtained from the learning method questionnaire. The learning method preferences were expressed as a five-point effective/ineffective ordinal scale.

Linton & Gallo (1975, p. 96) indicate that for a between-subjects design, with one dependent variable, where more than two levels of independent variable exist, the Kruskal Wallace test may be used to test for significance. In order to test for specific differences between independent variables, Linton & Gallo (1975, p. 306) recommend Ryan's procedure. Alternatively, the Kruskal Wallace multiple-comparison z-value test (NCSS, 1999b) would also be suitable to indicate differences between individual independent variables.

The research methodology defined above allowed for the collection of data that could be reliably used to test the research propositions mentioned earlier. The results follow.

3. Results

The sample's scores for learning styles were skewed mostly toward convergers constituting 39% of the sample and least towards accommodators, making up 17% of the sample. Divergers and assimilators

were relatively equally split at 21% and 24% respectively. From a hypotheses testing point of view, at least five responses were required from each learning style. Therefore, the imbalance in learning styles in the sample is not considered so significant as to adversely affect the overall validity of the research results. In this study, according to NCSS (1999a), all the assumptions were met according to the Kruskal Wallace and Kruskal Wallace multiple comparison z-value tests.

The normality of data is a requirement for parametric analytical techniques to be used. It was initially assumed that the data would not be normally distributed. In order to test for normality of date the Shapiro-Wilks W test was run at a 95% confidence level. The results show that in general the data was not normal. Only 7 of the 80 data sets passed the normality tests. As such the data are generally not normally distributed and non-parametric analysis must be used.

In order to test for the equal variance assumption, the modified levene test was run and it indicated that the data variance is the same for all questions except question 16 which was then excluded from further analysis.

In order to test whether learners in the workplace will have a preference for particular learning methods depending on their individual learning style, the Kruksal Wallace testing was applied to each of the 20 training methods (excluding question 16) identified and it indicated that for questions 6, 7 and 10 a statistically significant difference exists between the levels of preference for the learning method and the four learning styles. For the remaining learning methods, no significant preference existed between levels of preference for a learning method and the four learning styles.

The Kruskal Wallace multiple comparison z-value test was performed on question 6, 7 and 10 to determine the specific learning method preferences amongst the learning styles. Test results supported the prediction of accommodators, convergers and divergers but did not support the prediction for assimilators for question 6. For question 7 the tests supported the prediction for accommodators and assimilators, however, did not support predictions for divergers or convergers. Finally, for question 10 test resulted supported the prediction for accommodators, divergers and assimilators but did not support the prediction for convergers.

3.1. Interpretation of results. While the focus of this research was on whether a relationship between learning style and learning method existed in the workplace, it did seem intuitively logical that if this relationship existed in a college setting then it must exist in a workplace setting. It is surprising that the results of this study indicate that for the vast majority of learning methods investigated, there was no preference related to learning style. Of the 20 learning methods investigated only three learning methods showed a relationship with learning style.

For the rest of the learning methods (excluding question 16, see Table 1) there was no specific preference related to learning style. In an attempt to understand this unexpected result, a number of possible causes were identified:

- the research methodology was flawed;
- the data analysis was flawed;
- there was no relationship between learning styles and learning methods in the workplace.

In terms of the research methodology, the main elements being sample size (representative), sampling methodology (random) and the measurement tools used (Kolb's LSI 3 and the learning method questionnaire), the author believes that it is unlikely that any aspects of the research methodology were flawed or were the cause of the unexpected results obtained.

In terms of the data analysis the tools used for analysis are appropriate. Linton and Gallo (1975, p. 96) recommend that for a between-subjects design with one independent variable, where more than two levels of independent variables exist, then the Kruskal Wallace test be used to test for significance, thus, the author believes that the analytical tools used cannot be the cause of the unexpected results obtained.

Having eliminated all other possible causes of the unexpected research results, the only possible option that remains is that there is no significant relationship between learning styles and learning methods in the workplace. This result is totally contrary to the evidence that indicates a very clear relationship between learning styles and learning methods in a college environment. The most significant difference between this study and the previous research is geographical location (South Africa versus rest of the world) and the population type (workers versus students). The geographical location is not considered important as there is no evidence to suggest, it has any bearing on this research. Population type, on the other hand, appears to be the critical factor that explains the unexpected research results obtained.

One of the main differences between pre-adult and adult learning proposed by Dinmore (1997) is that adult learners derive their learning primarily from experience, while pre-adult learning derive their

learning mainly from books and other media. In the context of this study, pre-adult learners would be college students whose primary goal is learning, while adult learners would be workers who's primary goal is working. In a college setting, students attend lectures on various topics during the course of the day. Their learning world is limited largely to the lecture itself. Outside the lecture this learning very rarely continues. The lecture is the critical opportunity, where the student is able to learn, and as such the student depends greatly on the learning method matching his learning style. In a workplace setting, a learning intervention forms a small part of the worker's time and, most importantly, the worker can apply the learning in the work environment, thus, continuing the learning experience. The way the worker chooses to apply the learning is largely dependent on the worker himself and, as such, the worker will choose a method of application that he is comfortable with and that suits, albeit unconsciously, his learning style. Thus, the type of learning intervention that the worker is exposed to is not absolutely critical, as the worker can enhance this formal learning by informal learning in the workplace. Consequently, it is quite possible that, while students exhibit a strong relationship between learning style and learning method preference, in the workplace workers exhibit a weak relationship between learning style and learning method preference.

There is only one other study that investigates the relationship between learning styles and learning method preferences in the workplace, that being the work of Buch & Bartley (2002). Buch & Bartley (2002) conducted t-tests to establish if differences existed between learning styles and hypothesised learning method preference. Divergers indicated significant differences amongst all the learning methods while accommodators, convergers and assimilators indicate limited differences. In summary, the results obtained by the author mimic to a certain extent the results of Buch & Bartley's (2002) research. There seems to be only partial support for the author's hypothesis that there is a relationship between learning styles and learning method preferences in the workplace, however, this support was not consistent for all learning methods.

As previously mentioned, there were only three of the twenty learning methods which showed any relationship with learning styles, these were question 6: learning from videotape material, question 7: learning from slides i.e. from a presentation or lecture, and question 10: learning by role-playing. In all three instances it was found that learning method preferences could only be partially predicted. This is because it was quite difficult to match accurately the selected learning methods directly with those recommended by Svinicki & Dixon (1999). Of critical importance, though, is that while Svinicki & Dixon's (1999) work allows for some level of prediction of learning method preferences, it does not allow one to understand why that preference exists. In order to understand why learning method preferences exist, one must revert to Kolb's (1984) learning style theory.

In summary, it was unlikely that the research methodology was flawed and the cause of this anomalous result, the relationship between learning styles and learning methods, is weak. The basis for this argument lies in the fundamental differences that exist between adult learning and pre-adult learning as discussed above. In brief adult learning, which is typical of the workplace, has a large experiential element to it, while pre-adult learning, which is typical of college learning, does not have a large experiential element. It can be concluded, therefore, that the experiential element of workplace learning mitigates any relationship between learning styles and learning methods.

In the few cases, where a relationship was found to exist between learning styles and learning methods, preferences that were determined from the study could only be partially explained by Kolb's (1984) learning style theory. Using the learning style theory of Kolb (1984), a preferred and non-preferred learning style could be consistently identified for each learning method. However, for the same learning method, there were two learning styles, where a preference or non-preference could not be consistently explained. This inability to explain the preference or non-preference for a learning method arose from the fact that for these learning styles only one of the two continuum requirements that Kolb (1984) defined, were met. Neither the work of Svinicki & Dixon (1999) nor the learning style theory of Kolb (1984), were able to predict a relationship between learning styles and learning methods. The work of these authors predicted a preference in the workplace that ultimately did not materialise in reality. The work of Svinicki & Dixon (1999) and Kolb (1984) was, in essence, only useful in understanding why a relationship existed, when it did materialize in the workplace. The work of these authors could not help to explain why the relationship between learning styles and learning methods was weak in the workplace. For a few learning methods, a relationship will exist between learning method and learning style, however, it will not be possible to predict, using Kolb's (1984) learning style theory, which learning methods there will be there.

Finally, it is worth nothing that the vast majority of learning methods used in the workplace will be equally effective for all learning styles, provided that learners can apply this learning experientially.

Conclusions

Correl & Gregoire's (1998) statement that "to be successful, organizations must continually learn" underscores the importance of learning within organizations. Many organizations are devoting significant resources to the development of workers and any way to improve the effectiveness of learning will be of benefit to business. It has been shown that when learning methods are supportive of learning styles, improved learning takes place.

Virtually all past research on learning styles and learning method preferences was undertaken in a college setting. While there is significant value associated with applying learning style theory to learning in a college, the exact nature of the relationship between learning style and learning method in the workplace was unknown.

The main findings of the research study are:

1. In the majority of learning methods investigated, there was no relationship between learning styles and learning methods.
2. In the remaining minority of cases, where a tenuous relationship between learning styles and learning methods did exist, this relationship could only be partially explained by the learning style of Kolb (1984).

Limitations and further research. The limitations of this research give results which cannot be generalized to the entire population of the South African population. They do provide valuable insights into learning styles in the workplace and open up avenues for further research in this field.

Further research is suggested in the following areas:

- validity and reliability of the author's learning method questionnaire needs to be established;
- the premise that the relationship between learning styles and learning methods is weaker in the workplace needs to be explored further;
- the postulation that there are mitigating effects of experiential learning in the workplace should be researched further.

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