RELATIONSHIP BETWEEN TRAINING METHODOLOGY AND LEARNING STYLES ON LEARNING PERFORMANCE IN INDIAN INDUSTRY

ABSTRACT

OF THE
THESIS

SUBMITTED FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy
IN
BUSINESS ADMINISTRATION

BY
RIZWANA KHATUN

UNDER THE SUPERVISION OF

PROF. MOHAMMAD ISRARUL HAQUE
(Dean & Chairman)

DEPARTMENT OF BUSINESS ADMINISTRATION
FACULTY OF MANAGEMENT STUDIES & RESEARCH
ALIGARH MUSLIM UNIVERSITY
ALIGARH-202002 (INDIA)

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ABSTRACT

INTRODUCTION

The world today is growing at a phenomenal pace and organizations play a critical role in propelling this momentum forward. For success in the present era of dynamism and competition, organizations need to garner efforts towards the development of their employees. Sultan (2011) believes that today it is unquestionably mandatory to have competent, proficient dynamic and skilled employees. Foreseeing these changes, it is essential to offer regular training to employees for bridging the gap in their knowledge and competencies arising due to the swift changes in the contemporary workplace.

With the training budgets growing at a phenomenal pace, organizations need to take vigilant steps in providing continuous training to employees within the financial confines. Studies indicate that an important factor that may be considered for curbing on the incremental financial outlay is the selection of the most appropriate training methodology, so as to increase learning and transfer of the-acquired skills to the workplace. In this light the literature also advocates that the right selection of method is crucial to training effectiveness (Knight & Salter, 1985, as cited in Sanders, 2011; Petrakova & Sadana, 2007; Vijayabanu & Amudha, 2012; Webster & Martocchio, 1993, as cited in Chou, 2001).

Apart from the training methods employed to train employees, an important factor that contributes to ones development is the employee himself. One such characteristic, which has generated interest amongst researchers in recent years, is an individual's learning style. An individual's learning style is an important factor in understanding how one perceives and process information (Ching-Chun & Gamon, 2002). So, learning styles should be considered by training managers (Bohlen & Ferratt, 1997) to develop curriculum to address the diverse needs of the learners (Pallapu, 2007) as also support the selection of the most suitable training method (Alfonseca, Carro, Martin, Ortigosa, & Paredes, 2006).
Seeing that people generally spend 30 to 70 hours at their workplace, a friendly, enjoyable and stress-free atmosphere is crucial for effective performance of employees. Given that interpersonal skills influence interactions with others in a workgroup or with clients and customers; this study has considered cases pertaining to employee training in interpersonal communication skills. Additionally, studies indicate that good interpersonal communication skills are indispensable for a working environment that is friendly and enjoyable.

RESEARCH OBJECTIVES, QUESTIONS AND HYPOTHESES

A study of literature helped acquire a sound theoretical background to support and rationalize the relationships presented in the conceptual model (Figure – 3.1). In light of this review of existing literature, it was comprehended that training methodology and learning style of an individual is critical factor contributing towards learning outcomes from training. Considering these gaps, the following research objectives have been proposed:

1. To assess the relationship of training methodology and learning styles, both individually and in combination on learning performance in Indian organizations.

2. To gauge if a relationship exists between the learning styles of employees in Indian organizations and their preferred training methodology.

Based on these objectives, the following five research questions and five hypotheses have been formulated. These will help guide the study and help in finding useful conclusions on the questions that have aroused.

1. Is there an improvement in the learning performance of trainees after the training intervention?

H1A0: There does not exist any difference in the learning performance of participants between the pre-test and the post-test scores.

H1A1: There exists a difference in the learning performance of participants between the pre-test and the post-test scores.
2. Is there a difference in the learning performance of trainees based upon different training methodologies?

H2A0: There does not exist any difference between the mean learning performances of trainees in the three instructional groups.

H2A1: There exists a difference between the mean learning performances of trainees in the three instructional groups.

3. Is there a difference in the learning performance of participants based upon their learning style?

H3A0: There does not exist any difference between the mean learning performances of trainees of different learning styles.

H3A1: There exists a difference between the mean learning performances of trainees of different learning styles.

4. Is there an interaction between training methodology and learning style based upon the performance scores?

H4A0: There does not exist any difference in the learning performance of trainees with the different learning styles in the different training groups.

H4A1: There exists a difference in the learning performance of trainees with the different learning styles in the different training groups.

5. What, if any, relationship exists between adult learners having a particular style of learning and preferred mode of instruction?

H5A0: There does not exist any relationship between one's learning style and preference for a particular instructional method.

H5A1: There exists a relationship between one's learning style and preference for a particular instructional method.
RESEARCH DESIGN

The research design of a study provides a specific blueprint for collection, measurement and analysis of data. For the purpose of this study, a descriptive pretest-posttest evaluation case-study approach was adopted to investigate the relationship between the variable of interest as also to test causality with suboptimal control. Dimitrov and Rumrill (2003) state that ‘pretest-posttest designs are widely used in behavioural research, primarily for the purpose of comparing groups and/or measuring change resulting from experimental treatments’.

Study Sample

The population of the study were employees of different organizations, both services and manufacturing, who were trained during the period May 2012- May 2013 at two training centres in Ghaziabad (case study I & III) and Delhi (case study II). The sampling method for the study was a non probability convenience sampling.

For the purpose of this study, three case studies were conducted. The three different case studies were based on different group of employees related to different organizations. The target populations for each were employees who were currently employed in an organization. Purposive samples of 66, 64 and 51 adult learners were selected to be part of the three case studies.

Data collection and Instrumentation

For the purpose of this study, a survey was conducted to collect the required data. The purpose of survey research is to generalize from a sample to a population so that inferences can be made about some characteristic or behaviour of the population (Babbie, 1990). Several statistical variables were collected, which may be broadly classified into three sections.

The first part involved the determination of the participants’ learning styles, which are categorical nominal variables. This was accomplished by employing Kolb’s Learning Style Inventory (version 3.1). The second component intended to gather data pertaining to demographics which included an ordinal variable, age and a binary variable, gender. This section also collected information regarding the most preferred type of instructional method by an individual.
While the last section assessed the pre and post training knowledge through a knowledge test (21-item multiple choice) which was designed based on the objectives of the training. All the questions on the variables of interest were on a categorical scale.

**Statistical tools and techniques**

Some of the categorical variables were analyzed by chi-square of association. Paired samples t-test was also run to assess the changes in the learning performance based on pre-test and post-test scores. The main aspect of the study, which is the relationship between methods, style and performance were analyzed through two-way/factorial ANOVA. Dimitrov & Rumrill (2003) suggest that ANOVA is a statistical method which is traditionally used in comparing groups with pretest and posttest data.

**CASE STUDIES ANALYSIS AND FINDINGS**

The result of the paired samples t-test (Table - 1) shows that there was a statistically significant increase in the overall performance scores of trainees from pre-test to post-test in all the three case studies. Consequently, we reject the null hypothesis, H1A0, and we have sufficient evidence to conclude that there was an improvement in the performance of trainees after the training intervention.

<table>
<thead>
<tr>
<th>Case studies</th>
<th>N</th>
<th>Correlation</th>
<th>Pre-test - post-test (Mean)</th>
<th>t</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>66</td>
<td>.568</td>
<td>-2.015</td>
<td>-13.837</td>
<td>.000</td>
</tr>
<tr>
<td>II</td>
<td>64</td>
<td>.817</td>
<td>-1.656</td>
<td>-14.523</td>
<td>.000</td>
</tr>
<tr>
<td>III</td>
<td>51</td>
<td>.676</td>
<td>-1.686</td>
<td>-12.697</td>
<td>.000</td>
</tr>
</tbody>
</table>

In order to gauge the relationship between the two independent variables (training methods and learning style) and the dependent variable (learning performance), two-way or factorial ANOVA was carried out. Factorial ANOVA is used to address
research questions that focus on the difference in the means of one dependent variable when there are two or more independent variables.

In the present study, the focal independent variable is training methods, which has three levels (lecture, role-play and videos with discussion) while the moderator variable is learning style, which has four levels (accommodating, diverging, assimilating and converging). Therefore, the most appropriate statistical test is a $3 \times 4$ factorial ANOVA, where the number 3 and 4 refers to the number of levels in the two respective independent variables.

Table 2: Two-way ANOVA

<table>
<thead>
<tr>
<th>Case study</th>
<th>Method (F)</th>
<th>Sig.</th>
<th>Style (F)</th>
<th>Sig.</th>
<th>Method * Style (F)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>.349</td>
<td>.707</td>
<td>4.602</td>
<td>.006</td>
<td>2.049</td>
<td>.075</td>
</tr>
<tr>
<td>II</td>
<td>1.702</td>
<td>.192</td>
<td>3.297</td>
<td>.027</td>
<td>2.180</td>
<td>.060</td>
</tr>
<tr>
<td>III</td>
<td>4.432</td>
<td>.018</td>
<td>3.007</td>
<td>.042</td>
<td>1.020</td>
<td>.427</td>
</tr>
</tbody>
</table>

An important assumption of ANOVA is homogeneity of variance, that is, the population variances in all cells of the factorial design are equal. It is found that in all the three cases, there was sufficient evidence to say that there exist no differences in variances between the group’s means. Thus, indicating that the assumption underlying the application of the two-way ANOVA has been met.

Table – 2 presents the key points of the findings of two-way ANOVA. The first two columns are concerned with the differences in the learning performance of trainees in the different groups who were trained through different instructional methods (lecture, videos cum discussion and role-plays). Only one (case study- III) of the three case studies revealed a significant difference in the performance of the trainees in different groups. Howsoever in this case study also, an LSD Post Hoc revealed that only role-plays were significantly more effective than video cum discussion approach ($p =$
0.020), while there was no significant difference between role-plays and lecture \( p = 0.111 \) as well as lecture and videos cum discussion mode \( p = 0.374 \).

Consequently, the null hypothesis, \( H2A_0 \) is not rejected, and it was concluded that different instructional methods may at times result in differences in the learning performance of the trainees, but in most cases such differences are not significantly evident. Manochehr (2006), Brittan-Powell, Legum and Taylor (2008), Donkor (2010) and Liang (2012) are some of the researchers who agree that irrespective of the instructional methodology adopted to impart training, individuals learn more or less equally well in all environments if the training is designed with appropriate level of interaction.

The next two columns are related to the influence of learning styles (according to Kolb’s LSI) on learning performance. In all the three case studies we found a significant difference in the learning scores with regards to learning styles. Thus, the null hypothesis \( H3A_0 \) was rejected with satisfactory evidence to support the notion that individual learning styles have an influence on the performance of the trainees. This study further supports the similar findings by Manochehr (2006), Abidin et al. (2011) and Damavandi (2011). Furthermore, in each of the three case studies a unanimous outcome was that the accommodators performed exceptionally and significantly better than the convergers.

The last two columns provide the finding directed at investigating the combined effect of both training methods as also individual learning styles on learning performance. From the results of the three case studies, it may be concluded that there is enough evidence that this study too supports the findings of previous researchers (Manochehr, 2006; McCann, 2006; Brittan-Powell, Legum & Taylor, 2008; Liang, 2012) that there exists no interaction between the two on learning performance scores. Thus, with sufficient evidence, hypothesis \( H4A_0 \) fails to be rejected.

The last research question asked trainees of their preference for particular instructional methodologies, and assessed its relationship with respect to their learning styles. A chi-square test of association (Table - 3) in all the three studies revealed a significant association between an individual’s learning style and
preference for a particular methodology. Therefore, with sufficient evidence the null hypothesis, $H_{5A0}$ may be rejected.

**Table - 3: Chi-Square Analysis of Learning Style and Preferred Training method**

<table>
<thead>
<tr>
<th>Case study</th>
<th>Pearson Chi-Square ($\chi^2$)</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>17.200</td>
<td>.046</td>
</tr>
<tr>
<td>II</td>
<td>17.286</td>
<td>.044</td>
</tr>
<tr>
<td>III</td>
<td>21.847</td>
<td>.009</td>
</tr>
</tbody>
</table>

This finding is consistent with the results of the several previous researches (Buch & Bartley, 2002; Cassidy, 2004; Alfonseca et al., 2006; Davis, 2006; Kohl & Kohl, 2006, as cited in Tyberg, 2012; Pallapu, 2007; Wong et al., 2010). Besides, it was also observed that trainees with assimilating style tend to favour lecture methodology, the converging preferred the blended approach, the accommodating showed inclination towards role-plays while the diverging showed preference for the discussion along with videos.

**CONCLUSIONS**

Forgoing the traditional economic structure, the Indian industry has travelled a long journey and has evolved into a more liberal, modern, technology-based and dynamic system. In today’s highly global and competitive workplace, it is an unquestionable fact that competent, proficient, dynamic and skilled employees contribute towards the overall wellbeing of any organization. It is interesting to note that research indicates training as a key element of the bundles of practices resulting into high performance work systems with committed and motivated employees.

In a recent study in the domain of training in India, Subrahmanian (2010) recommends that in the face of continuous technological innovation, higher levels of knowledge and skills and their applications are crucial resources that can only be mobilized through training. Vijayasamundeeswari (2013) too contends that the
essence of development relies on the quality of human resource which is dependent on several factors, with training being a vital one.

As such this research delved into the study of employee training in organizations and assessed the eventual learning performance (gauged on the dimension of the difference in the pre-test and post-test scores) as a consequence of the training being imparted.

The present study considered three case studies with employees of different organizations who were trained in interpersonal communication skills, through different training methods. For the purpose of this study, it was realized that with the advent of flat and tech-driven organizations, it is immensely important for the employees to have efficient interpersonal communication skills.

The study indicated that training resulted in overall improvement in the trainees with regards to their learning and improvement in knowledge in the concepts related to interpersonal communication skills essential for effective performance in modern-day workplace. Provided that, training is the only form of formal learning activity, its success is decisive both for the employees as also the organization.

Although a number of factors have been found to influence employee learning, a prominent training related factor that is essentially considered to justify the expenditures made on training employees is training methodology.

The results of all the three case studies cement the concept of relatively similar learning performance in different instructional environments in case of employee training. This finding can be attributed to the fact that most of the trainees were newly recruited employees who possess the strong desire to learn and excel. Being new to an organization, with high energy and boosted morale, people tend to grasp and learn faster. Additionally, training tends to be a small part of the formal learning process for employees while most of the learning for them is part of the informal process. So, although training has significant impact on their learning outcomes, howsoever, the different instructional methods seemed to be almost equally effective.
Another significant point that may be highlighted here is that in all the three case studies there was a dominance of accommodators and divergers. This may be due to the basic fact that they are generally found in sales and managerial positions. They tend to involved in active and action-oriented roles. Their exceptionally flexible approach might be another reason for the virtually similar learning performance that was observed, of the trainees, in the three instructional groups.

With an active nature, one accustoms effortlessly to any situation, and so it becomes much easier to learn and excel. Role-plays and videos along discussion tend to be quite active learning techniques. And learning through lectures has deep roots in our educational system, of which we are very accustomed of. So, the very choice of the methods adopted for comparison may be another possible factor contributing towards the comparable learning performance that we observed.

A further remarkably notable aspect of parallel learning performance can be attributed to the fact that most of the trainees were below 45 years. This age corresponds to learners who have entered the workplace at a time when organizations are placing great value on learning.

Given that, the approach that an employee shows preference for is dependent on how comfortable they feel in that particular environment, which supports their style of learning. So another imperative factor that training practitioners may consider for deciding the most suitable methodology for imparting training and for fruitful learning outcomes, is an individual’s style of learning.

With Kolb’s (1984) experiential learning theory as one of the cornerstone of this study, it has also been observed that individuals with different learning styles indicate differences in learning performance; with the accommodators outperforming the trainees with the other learning styles and most specifically and significantly the convergers.

One reason for such differences may be owing to the fact that the training was on interpersonal communication skills. And as, most of the trainees in case study I and II had accommodating style while those in case study III were mostly divergers. So, the very topic of training complimented with the uniqueness of these two types of
learners; who happen to enjoy group interactions and look out for new avenues to explore.

Besides, as stated above employees will show preference to learn through methods that are congruent with their learning styles. So, as an important factor in training, an understanding of learning style will enable trainers to appreciate the diverse learning preferences and be better prepared to cross the learning gaps thereby, providing a more comprehensive training experience. Honigsfeld & Schiering (2004, as cited in Wilson, 2011) also state that incorporating learning styles based instructional strategies will create a comfortable learning environment and promote a love for learning.

Concurrent to the theory of Kolb’s learning style (1984); it has been observed that some trainees had a definite preference for certain instructional method, but not others. Researchers popularly refer to this unique individual preference as learning style. As proposed by the work of Svinicki & Dixon (1999) and Kolb (1984), the predicted preference for instructional methodology in the workplace materialised in reality. These findings are consistent with the general principles of learning styles and the expected preferences of individuals with these styles.

Considering this notable relationship, it is fundamental to consider individual penchant in designing training programmes. Dun, Ingham & Deckinger (1995) concur that besides, improving training outcome if preferences are identified and complementary rather than dissonant training approaches are adopted then the need for re-training and its related costs may be reduced substantially.

Conversely, the study failed to support the important concept of Aptitude Treatment Interaction, whereby it was observed that in case of employee training the combined effect of learning style and instructional methodology resulted in inconsequential outcome. Since Aptitude Treatment Interaction considers that, some instructional treatments are more or less effective for particular individuals depending upon their specific abilities (Kearsley, 2010). And so, there should have been some significant combinations.
In all the three cases, the plots of interaction effect did not show completely insignificant relationship, as the lines were not entirely parallel. But at certain points we observed intersections, which indicate some valuable trends. It has been observed from the plots of interaction effect (in the three case studies) that though not significant, the accommodators performed the best in role-plays and the assimilators predominantly in lectures.

An important aspect for such insignificant observation may be due to the non representative sample according to learning style, that is most of the trainees were accommodators while the representation of the convergers were half of the former. So the three case studies comprised of workforce that were somewhat imbalanced in having a preponderance of accommodators and divergers as compared with assimilators and convergers. As a consequence, the study failed to materialize any significant combination, consequently demanding for further research in this domain.

At the end, it can be said that this study provides a preliminary support to the notion that individuals prefer certain instructional methodology to others. Furthermore, the study contends that an association exists between training methods and learning styles as also their influence on learning performance. While apart from the significant learning style effect, the other relations failed to reach the significance level, though the data are suggestive of certain useful trends that merit further investigation.

These trends posit useful information, of which the most valuable outcome is that trainees indicate preference for certain methods over others, depending on their style of learning. The inclination was apparent; of the accommodators towards role-plays, the assimilators for lectures, the convergers for blended learning and the divergers in favour of videos along discussion. This is indicative of the fact that people tend to hold distinct preferences towards learning. Such an observation clearly cements the foundation of providing training based on learning style and training method preference.

In addition, to the above observations, an interesting revelation is the preference for the blended approach by most of the trainees. A method that incorporated lectures and online modules seemed to magnetize learners and this throws light on another dimension regarding the selection of the most suitable training method. It perhaps
indicates that if combinations of methods are adopted, people will tend to show greater proclivity besides improved learning. Moreover, clubbing methods will capture the interests of people with different learning styles orienting them towards superior performance.

**IMPLICATIONS OF THE STUDY**

The study has presented a lucid framework of the relationship between instructional methods and learning styles as well as their interaction on learning performance. The findings of this research have several important implications for employee training and performance improvement.

First, the study contributes to the body of literature that stresses the importance of self-directed adult learning, which is today’s necessity, owing to the increasing demands and dynamics of workplace. Consequently, while training employees, the trainer should act as a facilitator and develop the self-efficacy of employees thereby instilling the desire to learn. This will enable the trainers to cross the learning gaps of all the participating trainees.

Second, this research has wide implications for the corporate training departments, which have been emphasizing the need to move beyond the traditional classroom lectures. The findings suggest that the varied instructional methods may be equally effective for trainees of the different learning styles. However, considering the substantial effect of learning styles, it is suggestive that the best approach for the instructor would be to design a flexible structure and incorporate at least two different methodologies to engage the trainees of the different learning styles for an enhanced outcome.

Third, the findings have implications for the design and delivery of workplace training. This research suggests that it may be valuable to consider individual differences, the learning styles of trainees while deciding the optimal delivery methodology. Besides, such decisions regarding the selection of the appropriate instructional method they should also consider cost effectiveness as also the rate of return in terms of business outcomes.
Fourth, in this era of knowledge, for continuous employee development, it is critical to be armed with the skill of how learning best takes place. So, learning style information can be provided to trainees for diagnostic purposes. Moreover, when trainees understand their own learning strengths and weaknesses, they may take steps to adapt even to non-preferred instructional methods.

Fifth, the findings of this study have important implications for training evaluation research and practitioners. Training evaluation report should be considered in conjunction with learning style information in order to obtain more conclusive outcome. For instance, a poor overall outcome of training may be because the method adopted to impart training conflicted with the learning style of most of the trainees. And so, the instructional method adopted to impart training must be one that favours the majority of the trainees’ learning style.

Employees are an integral part of the society and their behaviours have implicit social implications. Organizations today are more flexible and based on formal and informal networks, making relationships an important dimension of progress both for the individual as well as the organization. As such providing adequate training to employees serves as a platform for better learning, healthier relationships with others and employee satisfaction resulting in improved performance and organizational profitability.

In conclusion, HRD practitioners can use these indicators to develop instructional strategies for designing and delivering more effective training programmes. Trainers should be adequately trained in the emerging needs of the corporate world of training. They should understand the essentials of the budding flexi-work culture, the rising disparate generations at work and the concept of individuality in groups.

**LIMITATIONS OF THE STUDY**

As with most research studies, this study too had its limitations. Most of these were related to the inherent nature and the design of the study.
i. The size of the sample in each case study was small as trainees and training centres were mostly reluctant in providing information regarding themselves and training.

ii. It was not permissible to witness the training programme, which further reduced the access to direct information which may have had influenced the results of the study.

iii. This study also did not investigate differences between the measured variables with respect to respondent’s demographic characteristics (gender, age, educational qualification), as it was beyond the scope of this research.

iv. The study is further limited in scope with regards to the nature of the population of the study. The sample considered to be part of the study was limited to trainees in sales/managerial rank. So, further research is deemed in this domain for a more accurate generalization of the study.

v. The study is also limited by the knowledge and skills of the researcher particularly in statistical area.

DIRECTIONS FOR FUTURE RESEARCH

Despite the fact that the limitations of the present study influenced the results, they also provided an important insight into both the content and procedural issues that need to be considered in further research. This study may prove useful to future researchers, as comparative analyses amongst industries for additional exploration.

i. An important recommendation for future research is to explore the effectiveness of other instructional methods.

ii. Another interesting direction for future research is to continue to monitor the preferred instructional methods for adult learners in the workplace.

iii. As has been observed in the present study that the learning styles have substantial influence on the preference for an instructional approach, so an interesting direction for future research is to incorporate the ‘matching hypothesis’.

iv. Likewise, in the present research, the trainees with different learning styles have shown differential learning performance. Moreover, considering the predominance of accommodators and divergers in the three case studies, it
may be interesting to undertake further research in order to determine the
preponderant learning styles in different industries.

v. Future research may include longitudinal studies and analyses conducted with
greater sample size to effectively validate and generalize the results.

vi. Researchers may further seek to investigate the influence of demographic
cultural and other individual variables on both preferences for a particular
instructional method, learning style and learning performance.

vii. Similar case study investigations including additional levels of evaluation such
as transfer of training or return on investment levels with respect to various
instructional methodologies and learning styles may be considered.
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ALIGARH-202002 (INDIA)

2014
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I, Rizwana Khatun Department of Business Administration certify that the work embodied in this PhD thesis is my own bonafide work carried out by me under the supervision of Prof. Mohammad Israrul Haque at Aligarh Muslim University, Aligarh. The matter embodied in this Ph.D. thesis has not been submitted for the award of any other degree.

I declare that I have faithfully acknowledged, given credit to and referred to the research workers wherever their works have been cited in the text and the body of the thesis. I further certify that I have not willfully lifted up some other's work, para, text, data, result, etc. reported in the journals, books, magazines, reports, dissertations, theses, etc., or available at web-sites and included them in this Ph.D. thesis and cited as my own work.

Date: 11/03/2014...

(Rizwana Khatun)
Research Scholar,
Department of Business Administration,
Faculty of Management Studies and Research,
Aligarh Muslim University,
Aligarh, India

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Signature of the Supervisor: ..............................................................................

Name & Designation: PROF. MOHAMMAD ISRARUL HAQUE (DEAN, AIBBA)

Department: BUSINESS ADMINISTRATION

(Signature of the Chairman of the Department with seal)

CHAIRMAN
Dept. of Business Admin.
A.M.U., Aligarh

THESIS
COURSE/COMPREHENSIVE EXAMINATION/PRE-SUBMISSION SEMINAR COMPLETION CERTIFICATE

This is to certify that Ms. Rizwana Khatun, Department of Business Administration has satisfactorily completed the course work/ comprehensive examination and pre-submission seminar requirement which are part of her Ph.D. programme.

Date: 11/03/2014

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(Rizwana Khatun)
Research Scholar,
Department of Business Administration,
Faculty of Management Studies and Research,
Aligarh Muslim University,
Aligarh, India
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RIZWANA KHATUN
PREFACE

"If you wish to plan for a year: sow seeds. If you wish to plan for ten years: plant trees. If you wish to plan for a life time: develop men"

-Kuan Chongtzu Tzu

To be successful in the present era of dynamism and competition, it is of utmost importance for organizations to garner efforts towards the development of their most important and precious resource—there human capital. In 2001, Vareta from his study concluded that the more efficient and capable human resource an organization possesses, the more will it succeed in the present competitive 21st century. Employees of an organization are like the engine of a car and just like a car an organization can go nowhere if this part is not oiled properly. It is an established fact that for the effectiveness and efficiency of an organization; competent, able, proficient, nimble, dynamic and skilled employees are unquestionably mandatory (Sultan, 2011).

As such it becomes crucial to offer regular training to employees for bridging the gap in their knowledge and competencies arising due to the swift changes in the contemporary workplace. Moreover training is given the highest priority as it is directly involved in skill building and development of employees (Roa, 1992). Furthermore, time and again it has been argued that employees need a multiplicity of competencies like knowledge, skills in technical areas, behavioural, human and conceptual areas, thus necessitating the need for training and development (Katz, 1974). The findings reiterate the role of training and development in learning and human resource development in the organizations.

Although the concept of training exists since time immemorial, a widely debated area is regarding the efficacy of the various training methodologies. Considering the extant literature, it was observed that a void needs to be filled in this area particularly in the Indian context and especially with regards to
training of employees in organizations. The present study considered three training methods (lecture, videos cum discussion and role-play), which were compared in three separate case studies in case of interpersonal communication skills training.

Another important dimension considered in the present study was individual’s differences in the approach to learning, which is learning style of an individual. Learning styles indicates how each individual acquires and passes knowledge in their own distinct way (Fleming, 2001 and Fuller, Norby, Pearce, & Strand, 2000). Furthermore, research signifies that learning styles are individual preferences and tendencies that influence learning (Smith, 1982; Robotham, 2003) as well as has considerable impact on knowledge retention (Borchert, Jensen, Yates, 1999).

This research study is organized in six chapters. Chapter one provides a brief introduction to the background of the study, along with the purpose of the study. The research questions and hypotheses of the study have been outlined along with the rationale and significance. Chapter two includes a thorough review of the relevant literature for the purpose of building the theoretical link between the concepts outlined in the conceptual framework. This review examines the concept of training, three different types of training methods and evaluation literature as also learning style literature, specifically studies based on Kolb’s Experiential Learning Theory.

Chapter three offers an explanation of the research methodology used in this study, the theoretical and the conceptual framework, the research questions and hypotheses, the research design and the data collection procedures. Chapter four presents a brief description about the industry to which the employees of the three case studies belonged to. It outlines the importance of interpersonal communication skills in these fields, besides describing their position in the Indian economy.

Chapter five presents the data analysis of the variables of interest along with the findings of the study. Finally, Chapter six evaluates the hypotheses and draws conclusions, offers there discussion in light of existing literature, presents the implications of the study, the limitations and suggests ideas for future research.
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CHAPTER - 1

INTRODUCTION

BACKGROUND OF THE STUDY
PURPOSE OF THE STUDY
RATIONALE OF THE STUDY
RESEARCH OBJECTIVES AND QUESTIONS
SIGNIFICANCE OF THE STUDY
SUMMARY
1.1 - BACKGROUND OF THE STUDY

In the contemporary Information Age, the drivers of GDP have shifted from tangible assets to intangible ones. For accelerated growth and to attain competitive advantage, organizations believe that the most critical asset is their people. Recognizing the importance of people in today’s organizations, Thomas J. Watson, the founder of IBM, pertinently stated that, “You can get capital and erect buildings but it takes people to build a business” (Snell & Bohlander, 2012).

Likewise, Peter Drucker, deemed as one of the greatest management thinkers of the last century believed that ‘talented people’ are the essential ingredient of every successful enterprise. In an article in Harvard Business Review in 1992, he marked that, while all organizations say routinely that people are their greatest asset, "Few practice what they preach, let alone truly believe it" ("Thoughts on Management by Professors and Professionals", 2008).

One of the notable reasons why organizations have often failed to give due importance to its people, is owing to the fact that it is very difficult to value people, since it needs to be instilled as part of the corporate culture. Moreover, for valuing people, organizations need to move beyond the concept of human resources towards the notion of human capital. As such, corporations need to consider people as an asset that gains or losses value depending on how much is invested, and how it is invested.

In addition, the evolution of the global economy, the mounting competition, and the tremendous pressure on organizations to improve their performance continuously, necessitates organizations to hugely invest in training and development of its most valuable asset – its people. This emerging interest in people necessitates organizations to develop smarter and better trained workforce.

In 1985, recognizing the importance of training, India was the first nation in the Asia-Pacific region to create a Ministry of Human Resource Development. The public sector (for instance, Bharat Heavy Electricals, Hindustan Aeronautics, State Bank of India, Steel Authority of India, and Coal India) along with this ministry established several corporate training departments to invest in the human capital that was envisaged to play a pivotal role in India’s growth and development in the years to
come (Aguinis & Kraiger, 2009).

In addition to an improvement in the knowledge and skills, employee training is an investment towards enhanced productivity and job satisfaction. As a consequence, in the relentless drive to attain competitive edge, organizations are funding colossal amounts into training their employees. With the training budgets growing at a phenomenal pace, organizations intend to employ training initiatives to develop requisite skills, indoctrinate new employees and build multiple skills for radically changing jobs (Nagar, 2009, as cited in Topno, 2012).

Literature is also suggestive of the fact that failure to train an employee will put an organization at a competitive disadvantage and it may eventually lead to business halt (Storey, 1989, as cited in Sultan, 2011). Therefore, developing employees is of paramount importance in today’s swiftly changing work environment.

Furthermore, to meet the demands of the dynamic workplace, the increasingly rapid pace of technological advances and the decreasing half-life of knowledge entail organizations to provide regular training to their employees.

With employee development becoming a strategic priority for many organizations, Human Resource functions too have grown in importance from a mere support role to a key strategic function. And so, training objectives needs to be aligned in line with the corporate vision and mission for training to play a strategic role in supporting an organization’s success. Subsequently, training in organizations has evolved beyond its traditional function of merely imparting knowledge and skills to a more pronounced role of learning and creating and sharing knowledge amongst the members of an organization.

Foreseeing the importance of training, organizations are increasingly investing in employee training and development. In times, when organizations are en route for cost-saving ventures, it becomes crucial for the Human Resource department to design and adopt effective training approaches to justify these huge investments. With the swift changes in technology, revolution in the economic, labour and technological world and the rise of new training methodologies, an important aspect in the domain of training is the selection of the most suitable training method.
Literature also advocates that the right selection of method is crucial to training effectiveness (Knight & Salter, 1985, as cited in Sanders, 2011; Petrakova & Sadana, 2007; Vijayabanu & Amudha, 2012; Webster & Martocchio, 1993, as cited in Chou, 2001). So, the most pertinent reason for undertaking the present study is the comparison of training methods.

Although, several studies have been conducted on the comparison of training methods both among students as also employees, howsoever the literature and research in the area in India is practically nonexistent. Moreover, studies do indicate that due to differences in background and culture, Indians generally seem to learn better in structured situations (Vijayabanu & Amudha, 2012). This further stirred in the desire to investigate the comparison of training methods.

Additionally, the limited research in India in the domain of employee training further necessitates further studies in this field, as training is fundamental to better comprehension and learning which are vital ingredients in the progress of any organization.

Apart from the training methods employed to train employees, an important factor that contributes to one’s development is the employee himself. In addition to external factors, an individual’s persona plays a very important role in his learning. One such characteristic, which has generated interest amongst researchers in recent years, is an individual’s learning style.

Noe (1986) after his study on various trainees attributes, proposed that trainee characteristics must be considered while designing training interventions. Furthermore, given that each individual has a unique learning style (Grasha, 1996, as cited in Robatin, 2009) and an individual’s learning style is an important factor in understanding how students perceive and process information (Ching-Chun & Gamon, 2002).

So, learning styles should be considered by training managers (Bohlen & Ferratt, 1997) to develop curriculum to address the diverse needs of the learners (Pallapu, 2007) as also support the selection of the most suitable training method (Alfonseca, Carro, Martín, Ortigosa, & Paredes, 2006).
In the contemporary organizations, which are curbing on financial outlays towards training, it becomes necessary to take vigilant steps in providing continuous training to employees within the financial limits. As such, an understanding of individual learning styles and most effective training methods suitable to the broader objectives of training is crucial in cost-effective and successful training outcomes.

Given the dearth of literature on these areas, it is inevitable to pursue some exploration in this domain in order to have a better insight about their sphere of influence. The present study has thus, isolated two factors, training methodology and learning style, that are believed to influence learning outcomes and eventually the performance of employees for the success of organization.

Over the years, some researchers have categorised and ordered (according to preference of training managers) various training methods based on certain objectives, without considering any individual characteristics (Carroll, Paine, & Ivanevich, 1972; Furunes, 2005; Kaupins, 1997; Perdue, Ninemaier, & Woods, 2002).

Furthermore, several researchers have conducted a multitude of research on the relationship between different training methodologies and individual characteristics (locus of control, learning styles, self-efficacy, etc.). Of particular interest are studies comparing training methods and adult learning styles.

In 2002, Buch & Bartley examined the relationship between learning style and preference for different modes of training such as computer-based training, classroom-based training, print and TV-based training. They hypothesized that “individuals with specific learning style would have preferences for specific training delivery mode formats” (p. 5). Using Kolb’s Learning Style Inventory 3 (1999), they found that convergers had a stronger preference for computer-based training whereas assimilators preferred print based delivery (Buch & Bartley).

In yet another study, Rijamampianina (2010) assessed whether any relationship existed between learning style and training methodology in the workplace. Of the 20 training methods investigated only three (learning from video-tapes, lectures and role-plays) showed a relationship with learning style. Consequently, in both these studies,
only a partial support on the relationship between learning styles and training methods preferences in the workplace could be observed.

Extending upon the above works are studies that have compared certain training methods with respect to individual learning styles. However, in most studies the traditional instructor-led setting has been compared with either computer based methods (Behnke & Ghiselli, 2004; DiPietro, 2003; Manoochehr, 2006) or behaviour-modelling (Chou & Wang, 2001; Chou, 2001; Simon, 2000).

Of a particular interest, is a study by McCann (2006), who investigated the relationship between Extension employees’, learning styles and their performance in three different types of learning environments: traditional face-to-face instruction, minimally interactive online instruction, and highly interactive, multimedia-rich online instruction. Analysis using a 4 x 3 factorial ANOVA revealed that participants in the traditional face-to-face and the multimedia-rich, highly interactive online environment had statistically higher post-test scores than those participants in a minimally interactive online environment. Moreover, it was found that a participant's learning style had statistically no significant effect on their final post-test scores in any of the three instructional methods; and no significant interaction was found between the learning style and instructional methodology.

The present study intends to replicate the work of McCann (2006) on employees working in India, however considering a different set of training methods. Moreover, this study furthers the work of Rijamampianina (2010) in the context of the three methods used for comparison, which are lectures, videos and role-plays. This perspective is essential to understand the complex needs of the adult learner in today’s dynamic workplace, where continuous training is critical to survival and progress.

Seeing that people generally spend 30 to 70 hours at their workplace, a friendly, enjoyable and stress-free atmosphere is crucial for effective performance of employees and establishing a winning relationship between employees in an organization. Studies indicate that good interpersonal communication skills are indispensable for a working environment that is friendly and enjoyable. Such skills help employees develop good relations, allows ideas to be shared easily as also minimizes any kind of work place conflict. Arthur, Bennett, Edens & Bell (2003) are
of the view that interpersonal skills and tasks are those that are related to interacting with others in a workgroup or with clients and customers.

Effective interpersonal communication skills not only resolve conflicts, but are also associated with successful management (Bambacas & Patrickson, 2008). Furthermore, expertise in interpersonal communication improves individual and group outcomes in life and work (Blandhol, 2012). Moreover, a survey by Duke Corporate Education (DCE) (2011) revealed that the Indian corporate training market was around US $2.8 billion and that there was a high demand for sales training, followed by soft skills such as communication and managerial effectiveness.

Given the immense impact of interpersonal communication skills on employees and their organizations, it is important that organizations adopt suitable measures to inculcate training in such skills so as to encourage a favourable workplace. Consequently, the present study is based on comparing training methods (lecture, videos sum discussion and role-play) and the influence of learning styles (according to Kolb, accommodating, diverging, assimilating and converging) on learning outcomes (based knowledge test) in teaching interpersonal communication skills training.

The results of this study can help organizations to employ more effective and customized training to suit the needs of the modern-day adult learners and hence reap the benefits of training through increased productivity and competitive edge.

The study will thus provide fruitful insights into the preferred methodology for individuals of a particular learning style, the most effective and the least effective method for interpersonal communication skills training, and the relationship between training methodology and learning style on learning outcomes (both individually and combination effect).

1.2 - PURPOSE OF THE STUDY

The median age of India’s population in 2020 is expected to be around 29 years. Together with this youth power, it is expected that the global economy is likely to witness a shortage of skilled manpower. This window of opportunity provides India
the “demographic dividend” it can make the most of not only for domestic opportunities but also to meet the requirements in the international domain. In the light of this situation, there is a need for huge investments to equip the burgeoning youth with education and appropriate training so as to build an army of skilled, employable youth for a brighter and prosperous India.

Although the youth population is to escalate very soon, but at present the country faces an immense shortage of skilled manpower. In an address concerned with the shortage of skilled workers Prime Minister, Manmohan Singh said, ‘As our economy booms and as our industry grows, I hear a pressing complaint about an imminent shortage of skilled employees. As a country endowed with huge human resources, we cannot let this be a constraint’. For this purpose, the government of India is taking initiatives to create a skilled workforce of 500 million by 2022 (Hajela, 2012).

The main reason behind the lack of a sufficient number of skilled workers in India is the absence of training (Hajela, 2012). Since training is the solution that facilitates organizations to maximize performance of their employees at all levels (Jagero, Komba & Mlingi, 2012), so appropriate training strategies needs to be planned in order to cater to the requirements of increasing young population and their diverse needs.

Moreover, training and development of employees is important not only for the growth and development of the employee but is also critical to the long-term success of the organization (Rijamampianina, 2010). An essential aspect in this dimension is the proper design and development of training programmes in view of the factors that may influence training outcomes.

While it is not possible to study the influence of several factors and is beyond the scope of a single study, so only two factors have been considered: one external to an individual- training methodology and one related to a person, which is one’s individual style of learning. Furthermore, since no study could be isolated regarding these two dimensions in the Indian context, so a need was realized to carry out research in this domain, which apparently appears to be critical in the success of any training initiative.
These two factors have been isolated after recognizing the need to address the impact of them on training outcome. Given 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 ……………… individuals are trained the same way irrespective of their individual learning style. While there are many different methods of learning organizations do not choose the most appropriate learning method for an individual” (Rijamampianina, 2010, p. 150).

1.3 - RATIONALE OF THE STUDY

This study finds a firm grounding in the principles of training methodology and learning style contributing towards successful training outcomes. It is believed that an understanding of these two dimensions will enable designers of training programmes to provide training that is both meaningful to employees as also leads to learning that may eventually transfer to the job. Besides bridging the existing gap in literature, this study will offer practical solutions to training practitioners and organizations.

In the perspective of training methodology, the study will provide details about which instructional methods trainees prefer to learn through. The results of this study will also offer valuable insights to organizations about which training methods are more useful when training is to be imparted on interpersonal communication skills, which is a soft skills training essentially endorsed by almost all organizations in the current scenario. The information gleaned from this study will thus prove beneficial for instructional designers, training managers and executives to make appropriate decisions regarding the training and development needs of their employees.

From the point of view of adult learning, the survey intends to demonstrate that adult learners have different learning styles, that is, all adults do not necessarily learn via the same type of training methodology. Additionally, knowledge of learning styles acts as a “lexicon of learning”, an intelligent language, by which learners and instructors may discuss learning (Coffield, Moseley, Hall, & Ecclestone, 2004, p. 120).
This point has been supported by Reynolds (1997, as cited in Coffield et al., 2004) who states that learning style tests, such as Kolb’s Learning Style Inventory (LSI), may safely be exploited ‘as a means of facilitating discussion about learning’.

Thus, beyond the benefit of deciding the most appropriate method, the LSI can be used as a diagnostic tool to create more self-aware learners. Such awareness of one’s learning style will inculcate a better attitude for life-long learning, which a necessity in today’s workplace.

1.4 - RESEARCH OBJECTIVES AND QUESTIONS

A study of literature helped acquire a sound theoretical background to support and rationalize the relationships presented in the conceptual model (Figure – 3.1). In light of this review of existing literature, it was comprehended that training methodology and learning style of an individual is critical factor contributing towards learning outcomes from training. Considering these gaps, the following research objectives have been proposed:

1. To assess the relationship of training methodology and learning styles, both individually and in combination on learning performance in Indian organizations.

2. To gauge if a relationship exists between the learning styles of employees in Indian organizations and their preferred training methodology.

Based on these objectives, the following research questions and hypotheses have been formulated. These will help guide the study and help in finding useful conclusions on the questions that have aroused.

A total of five research questions and five hypotheses have been suggested in light of the conceptual model proposed for the purpose of this study.

1. Is there an improvement in the learning performance of trainees after the training intervention?

**H10:** There does not exist any difference in the learning performance of participants between the pre-test and the post-test scores.
H1: There exists a difference in the learning performance of participants between the pre-test and the post-test scores.

2. Is there a difference in the learning performance of trainees based upon different training methodologies?

H2: There does not exist any difference between the mean learning performances of trainees in the three instructional groups.

H3: There exists a difference between the mean learning performances of trainees in the three instructional groups.

3. Is there a difference in the learning performance of participants based upon their learning style?

H3: There does not exist any difference between the mean learning performances of trainees of different learning styles.

H3: There exists a difference between the mean learning performances of trainees of different learning styles.

4. Is there an interaction between training methodology and learning style based upon the performance scores?

H4: There does not exist any difference in the learning performance of trainees with the different learning styles in the different training groups.

H4: There exists a difference in the learning performance of trainees with the different learning styles in the different training groups.

5. What, if any, relationship exists between adult learners having a particular style of learning and preferred mode of instruction?

H5: There does not exist any relationship between one’s learning style and preference for a particular instructional method.
HS5: There exists a relationship between one's learning style and preference for a particular instructional method.

The study employed a descriptive pretest-posttest evaluation case-study approach to test the above hypotheses. A knowledge test questionnaire (for assessing the level of learning interpersonal communication skills) was developed and tested prior to its final application. For the purpose of obtaining information pertaining to learning style, Kolb's Learning Style Inventory (version 3) (Kolb, 1999) was used.

The data collected from these questionnaires was analyzed using SPSS (version 16.0) software to statistically determine significant relationships through multiple analytical techniques.

1.5 - SIGNIFICANCE OF THE STUDY

This study was momentous for several reasons. First, this thesis filled the void through establishing a relationship between training methodology and learning outcome, learning style and outcome and the interaction between the two on learning performance.

Further, since existing literature does not contain any study on this dimension in India in an organizational setting. So, this study has also fulfilled a need for providing a means to identify whether there is an association between learning style and preferred training methodology. In this way, the study adds to the body of existing knowledge because prior to this research, training methods have been mostly compared in isolation but this study has added a new dimension that is, learning style.

Especially in India, the concept of learning styles happens to be in a nascent stage which is slowly gaining momentum. Besides, literature is suggestive of the fact that incorporating individual characteristics in designing training programmes has been documented as a rewarding decision.

Adding to adult learning theory, this study was theory-building in nature as it examined trainees' performances in relation to three different types of instructional methods. Further, their preferences were also assessed in relation to four different types of methods. The resulting information will facilitate companies to design
training to cater to the needs of a diverse workforce, thereby presumably increasing learning and transfer of knowledge.

Finally, this research will provide invaluable information to organizations in the domain of employee training and development. Armed with the knowledge of which training methods are most/least effective, which one prefers and perceives to be most effective, trainers can design programmes that meet the needs of a much larger number of employees. This, in turn, will provide effective and economical solutions to organizations regarding their training initiatives.

1.6 - SUMMARY

This chapter has presented an outline of the research background, its purpose and rationale, the research questions along with the hypotheses, and the significance of this research study. The chapter thus highlights the fact that an understanding of which method employees prefer to learn through, which are most and least effective and how they learn will support managers and trainers in the development of training programmes which will be conducive to the transfer of knowledge from the classroom to the work environment.
CHAPTER 2

REVIEW OF LITERATURE

INTRODUCTION

BACKGROUND

AN OVERVIEW OF TRAINING

ROLE OF TRAINING METHODOLOGIES ON TRAINEES’ PERFORMANCE

ROLE OF TRAINEES’ CHARACTERISTICS ON PERFORMANCE

LEARNING STYLES AND INSTRUCTIONAL INTERACTIONS

EVALUATION OF TRAINING

SUMMARY
2.1 - INTRODUCTION

This present chapter is based on the review of extant literature from relevant books and research papers available in databases such as Emerald, Sage Publication, Wiley, Ebscohost, ProQuest, JSTOR (Journal Storage), IngentaConnect, ScienceDirect, SpringerLink, PsycARTICLES and ERIC (Educational Resource Information Centre). The various concepts that have been considered in this study have been studied in order to determine the research gap.

The chapter first presents an overview of the field of training, followed by the understanding of the actual concept of training and the various training methods. This is followed by the concept of learning style as also a review of studies in the domain of learning style and training methods interaction. Finally an outline is presented on the concept of evaluation of training. Towards the end, a summary of the charter is presented.

2.2 - BACKGROUND

The predominantly labour-based and industrialised economy of the 20th century ended in favour of globalization and rapidly changing technology. Fuelled by knowledge; it gave birth to the present era of information-based economy. This paradigm shift in the economy and workforce transformation is lucidly described in the words of the renowned Nobel laureate and professor of economics, Gary Becker, that in the present era, 70% of the country’s wealth is in human capital and their respective knowledge.

The increasing demand of ever new products and practices has resulted in changes in the nature of work as also the skills required. As such, knowledge is no more static. Moreover, the fast pace of development and innovation requires employees to learn constantly (Alonderiene, 2009; Zuzeviciute & Tereseviciene, 2010) and faster (Kian & Sabbaghan, 2012) in their professional life.

Consequently, in today’s information age the key driver of GDP growth has shifted from tangible to intangible assets. In order to sustain the intense competition and increase productivity, organizations too have moved beyond the notion of ‘human resources’ towards ‘human capital’.
According to Marimuthu, Arokiasamy & Ismail (2009), human capital involves processes that relate to training, learning and other professional initiatives to increase the levels of knowledge, skills, abilities, values, and social assets of an employee. It is one of the most vital factor for improving a firm assets and employees (Schultz, 1993) especially for employees’ continuous development (Rastogi, 2000). Keeping in view the demands of the present day organizations, where continuous learning is an integral part of success, organizations need to adopt the concept of human capital to provide greater employee satisfaction and performance.

Over the years, substantial studies have shown that contented employees are the key drivers of organizational success, therefore, the competition today is between who can educate, train and retrain the best human capital (Carnevale, 2005). Studies too support the view that human capital is the most critical organizational asset for sustainable competitive advantage (Schultz, 1993; Fitz-enz, 2000; Bontis & Fitz-enz, 2002; McGregor, Tweed & Pech, 2004; Sloman, 2005; Khandekar, & Sharma, 2005; Yazdani 2008; Memon, Mangi & Rohra, 2009; Sarra, Benabou & Tabeti, 2013).

Since employees are the primary source of learning and change, organizations need to understand how adults learn and develop for building a knowledge-based organization. Additionally, according to Grant (1996, as cited in Memon, Mangi & Rohra, 2009), ‘the human element has grown in importance because knowledge has become a critical ingredient to gain competitive advantage, particularly in the new economy landscape’. Besides, playing a significant role towards organizational success (Tabassi, Ramli & Abu Bakar, 2011), a well-developed human capital contributes to improved individual productivity, enhanced organizational performance and greater national economic growth (Alipour, Salehi, & Shahnavaz, 2009).

The need for quality human capital gave birth to the concept of human resource development (HRD). HRD is any process or activity that has the potential to develop work-based knowledge, expertise, productivity and satisfaction, whether for personal and group/team gain, or for the benefit of an organization (Swanson, 2009), community, nation, or, ultimately, the whole of humanity (McLean & McLean, 2001).

Human resource development (HRD) is concerned with the provision of learning and development opportunities that support the achievement of business strategies and
improvement of organizational, team and individual performance (Armstrong & Baron, 2002, as cited in Verma, & Goyal, 2011; Sambrook, 2004; Alipour et al., 2009; Lengnick-Hall et al., 2009; Tseng & Lee, 2009; Wang, Hwang, & Lin, 2011). From a strategic perspective, HRD is 'aimed at facilitating the attainment of organizational aims, while at the same time ensuring the full employment of the knowledge and skills of employees' (Garavan, 1991).

The two major realms of HRD are organization development (OD) and training and development (T&D). As their names imply, OD focuses at the organization level, which connects with individuals, while T&D focuses on individuals, and connects with the organization (Swanson & Holton, 2001). The most important subsystem of HRD is training and development (Altarawneh, 2009), which is concerned with organizational activity concerned with improving the performance of individuals and groups in organization (Altarawneh, 2009).

Training and development aids in identifying, assuring and helping the development of key competencies that enables an individual to perform current or future jobs (McLagan, 1989 cited in Wan, 2007). In other words, it may be considered as a process of systematically developing work-related knowledge and expertise for improved individual performance (Swanson & Holton, 2001). So, training and development involves investment in human resources to attain organizational objectives (Lokesha & Siddegowda, 2011) eventually adding value to human resource (Obisi, 2011).

The two main dimensions of training and development are individuals and learning (Russ-Eft, Sleezer, & Preskill, 1997) which holds the key to the growth and improved performance of an organization through knowledgeable workforce. It thus becomes necessary for today’s organizations to incorporate training and development as a continuous activity (Obisi, 2011; Zareen, Razzaq, & Ramzan, 2013) for attaining competitive advantage (Rahimli, 2012) in the global marketplace.

2.3 - AN OVERVIEW OF TRAINING

Training has been one of the most common interventions used by organizations for decades to enhance performance of its employees, for improving their working
expertise and for teaching them new ideas and skills. With the rapid increase in the world population, the industrialization of the developing economies, and increasing demand for new products and services, the need for effective and efficient training will only escalate.

Besides, the continuous threat of knowledge obsolescence; training also favours individual and organizational growth (Read and Kleiner, 1996). This demands the requirement for understanding training and its allied concepts for offering training, which may help organizations develop a strong and competitive workforce ready to face the ever-changing challenges of today’s dynamic work-environment.

Training is a powerful agent for facilitating an organization’s expansion, development of capabilities and improvement of profitability (Cosh, Duncan, & Hughes, 1998). It is a means of ensuring that the organization has the people with the correct mix of attributes, through providing appropriate learning opportunities and motivating people to learn, and thus enabling them to perform to the highest levels of quality and service (Bentley, 1990). Huang (2001) agreed that a well-educated and well-trained workforce is essential in maintaining an organization’s competitive advantage.

Noe (2010) too asserted that training serves as the catalyst to drive change and assists organization to achieve its stated strategic objectives. Organizations cannot rely only on conventional specialism, but to compete in the future they must develop their own repertoire of skills to face the present century of productivity and quality (Anis et al., 2011).

To conquer these challenges, organizations need to be equipped with characteristics of adaptability, flexibility and permanence to remain in the global market. Therefore, training is critical to organization’s performance and success.

Training is the planned intervention that is designed to enhance the determinants of individual-job performance (Chiaburu & Tekleab, 2005; Sahinidis, 2008). It is an “opportunity” for learning and is accomplished by providing employees with opportunities to learn how to perform more effectively and by preparing them for any changes in their job (Alipour et al., 2009).
The concept of training acknowledges the relationship between individual characteristics (Goldstein, 1980; Mathieu, Tannenbaum & Salas, 1992; Tracey et al., 2001; Naquin & Holton, 2002; Velada et al., 2007; Bakkabulindi, 2011), focussing upon training effectiveness (Kraiger, Ford & Salas, 1993; Klink & Streumer, 2002; Santos & Stuart, 2003) and motivation to learn (Mathieu et al., 1992; Wiethoff, 2004, Colquitt et al., 2000; Kraiger & Ford, 2007).

Some of the individual characteristics that have been studied include self-efficacy (Quinones, 1995; Decker, 1998; Stajkovic & Luthans, 1998; Colquitt et al., 2000; Salas and Kosarzycki, 2003; Mahyuddin et al., 2006; Lampert, 2007; Onyeizugbo, 2010), locus of control (Findley and Cooper, 1983; Noe, 1986; Knowles & Kerkman, 2007; Arvind & Haque, 2008; Barzegar, 2011) and learning style (Barmeyer, 2004; Boström & Lassen, 2006; Barzegar, 2011). As such, training success is a function of the learning that occurs as a product of complex cognitive changes in an individual.

In today’s fast changing world, amid limited budgets and a need for cost-effective solutions, organisations need to ensure that what they are investing is essential and will result in assured benefits. For effective training to take place, it is a vital prerequisite to know the requirements of the employees, the various departments and the organisation as a whole.

The primary and the most important step for effective training and development therefore focus on the process of deciding what and who needs to trained, that is, conducting training needs analysis (Goldstein, 1980, Tracey, Tannenbaum, & Kavanagh, 1995; Tannenbaum 1997; Al-Khayyat, 1998; Salas & Cannon-Bowers, 2001).

Training needs assessment is the starting point of any training process. Anderson (1994) lucidly explained it, as the basis for identifying the needs of the organization and its existing employees. Moreover, it helps identify where and what kind of training programs are needed, who needs to be trained, the conditions under which training will occur (Goldstein, 1980), and is a vital criteria to guide training evaluation. Another important aspect of need analysis is the specification of learning objectives, which in turn shapes the design and delivery of training programme.
Although existing literature is replete with several training needs analysis models (Leigh et al., 2000), the McGehee and Thayer’s (1961) three-level (Organisation-Task-Person) conception of needs assessment is considered the core framework and most of the models developed since have been based on this three-level framework (Goldstein, 1980; Holton, Bates, & Naquin, 2000). Hence, training cannot be effective unless it meets the individual, organizational, and task needs as identified by needs analysis.

Human resources and technological resources complement each other in the process of production. The duty of corporate management today is to orientate and train all employees on how to continually change and improve the quality of their working life by arousing their interest, motivation and thirst for learning. In the current fast-paced and challenging world of technological advances, the need of training human resources has become more imperative than ever. It is a continuous process extending beyond the initial qualifications: to maintain, upgrade and update skills throughout working life.

Employee training is thus, at the heart of modern management practice in any organization. It is the cornerstone of sound management and development of productive and effective work force (Scott, Clothier & Spriegal, 1977, as cited in Obisi, 2011). Training and development fosters creativity in employees and helps prevent manpower obsolescence, which may be due to age, attitude or the inability of a person to adapt him or herself to technological changes (Aronoff & Litwin, 1971, as cited in Obisi, 2011).

Training in the workplace involves teaching, developing and modifying the behaviour of an employee to attain organizational goals. Any organization that wants to succeed has to maintain workforce comprising of people who are willing to learn and develop continuously. Training and developing human resource, therefore, has specific goals of improving one's capability, capacity, and performance as also plays a tremendously important role in the effective management and maintenance of a skilled workforce (Alipour et al., 2009).

Training is an event initiated and managed by the organisation with a specific purpose in mind. It is an instructor-led content-based intervention leading to the desired
changes in behaviour (Reynolds, 2004). Conventionally training refers to a systematic
process that involves the acquisition of knowledge, sharpening of skills, concepts,
rules, or changing of attitudes and behaviours to enhance the performance of
employees (Goldstein, 1980; Lynton & Pareek, 1990; Scott & Meyer, 1991;
Crutchfield, 2000; Singh, 1998; Goldstein and Ford 2002; Aswathappa, 2004;
Chhabra, 2004; Dubois & Rothwell, 2004; Kraiger & Ford, 2007; Alipour et al.,

Some authors envisage training as a set of activities or processes that prepares
individuals for their current positions (Nwachukwu, 1992; Welber & Feinberg, 2002;
Gomez-Mejia, Balkin, & Cardy, 2001), while some contend that the focus of training
is developing employees for a higher position with increased responsibilities (Verma
& Goyal, 2011).

Snell & Bohlander (2012) propose that training may involve ‘any effort initiated by
an organization to foster learning among its members’. It thus, provides a learning
experience that instils a relatively permanent change in an individual thereby
improving their job performance ability (Kraiger et al., 1993; Arthur et al., 2003).

The basic objective of training is to help people improve their performance. Lynton
& Pareek (1990) consider training as a ‘means to reduce obsolescence among people
and organizations in the face of relentless technological innovations’. Hence, it
prepares employees to use new technologies, function in new work systems such as
virtual teams, and communicate and cooperate with peers, customers, and
stakeholders who may be from different cultural backgrounds (Noe, 2010).

Training is a process (Boulouetian, 2009; Obisi, 2001) to enhance the skills, talent and
knowledge of an employee. It helps people acquire capabilities for achieving
organizational goals (Mathis & Jackson, 2003). So, training may be described as a
planned learning experience for the acquisition of new knowledge, attitudes or skills
(Campbell, Dunnette, Lawler & Weick, 1970; Goldstein, 1980) and social behaviour
so that the performance of the organization improves considerably (Cascio, 2000).
Conversely, ‘training is an organized procedure by which people learn knowledge
and/or skills for definite purpose’ (Beach, 1980, as cited in Punia & Kant, 2013) with
an objective to achieve change in the behaviour of those trained.
In one of the best books on the psychology of training, Patrick (1992) defines training as the systematic development of the attitudes/knowledge/skill behaviour patterns required by an individual in order to perform adequately a given task or job. This definition is quite similar to those provided by Goldstein (1980) and Latham (1988) that training is the systematic acquisition and development of the knowledge, skills, and attitudes required by employees to perform adequately an assigned job or task in order to boost performance in the work place. Both these definitions of training further accentuate Flippo’s (1976, as cited in Punia & Kant, 2013) definition that "training is the act of increasing the knowledge and skill of an employee for doing a particular job”.

The fundamental aim of training is thus, to help organizations achieve their purpose by adding value to their key resources i.e. the people they employ. According to the new thesaurus, Roget's II published by the Houghton Mifflin, the definition of training is the act, process, or art of imparting knowledge and skill or the repetition of an action to develop or maintain one's skill. Besides that, training is viewed as a systematic effort to modify or develop knowledge, skills, abilities, and attitudes through the learning experience, to achieve effective performance in an activity or range of activities (Burcley & Caple, 2000).

Armstrong (2001, as cited in Köster, 2002) defined training as a ‘planned and systematic modification of behaviour through learning events, programmes and instruction which enable individuals to achieve the levels of knowledge, skill and competence needed to carry out their work effectively’. Therefore, investing in training means that employees will be able to perform better and empower themselves to make use of their natural abilities. Thus, it helps to mould employees’ attitudes and contributes meaningfully to the organization by enhancing their performance.

As such, training is a practical and vital necessity because it enables employees to develop and rise within the organization (upward mobility), to increase their market value, earning power and job security (Mamoria, 1995, as cited in Obisi, 2011). Besides training also, helps workers to adjust to the technological changes at their workplace and provides a platform for introducing people to the world of work at the entry level (Deutsch, 1979). Sims (1993) concurs with other authors in defining
training as a systematic and planned approach to teaching knowledge, skills, abilities, and attitudes, with certain features.

Furthermore, we may say that training is a process of changing behaviour and motivation to improve the match between employee characteristics and the demands of a job. The process consists of planned programmes designed to improve competence and performance at the individual employee, group, and organisational levels. Improved competence and performance, in turn, imply that there have been measurable changes in knowledge, skill, abilities, attitudes, behaviour.

Robinson and Robinson (1998) contend that, in this era of balanced scorecard, the goal of training is not just ‘learning’ but ‘performance enhancement’. Research though inconclusive too accepts the contention that training leads to greater comprehension. Thus, the goal of training is for employees to master the knowledge, skills and behaviours and to apply them to their day-to-day activities. Besides, it also provides firms with a unique and differentiated position that can improve the standard and quality of service or products (Manju & Suresh, 2011), resulting in continual innovation and increased productivity and profitability (Mathews, 2002; Taylor & Davies, 2004).

To survive in the increasingly competitive marketplace, training is no longer a luxury, but a necessity for companies. In addition, organizations have shifted their views about training from a separate, stand-alone event to a fully integrated, strategic component of the organization (Buckley, Roger & Jim Capel, 2000; Tanova & Nadiri, 2005).

In order to attain positive results, training needs to be correlated with the organizational strategy (Delaney & Huselid, 1996). Accordingly, organizations need to create lucid and logical links between the corporate mission and purpose to the short-, medium- and long-term effects of training (Buckley & Capel, 2007; Montesino, 2002; Goldstein & Ford, 2002; Alipour et al, 2009). Hence, for the continuation of a successful business, it is imperative that organizations decide the objectives and purposes of training based on business needs and strategies.

In order to remain competitive, organizations must rely on workplace learning and
continuous improvement (London & Moore, 1999, cited from Salas & Cannon-Bowers, 2001). New technologies, reduction of trade barriers, new forms of work organization, and more rapid innovation in products and services have been widely seen as speeding the pace of learning at work (Stern, Song, & O'Brien, 2004).

Moreover, training and development also provides a competitive edge to a firm (Schuler & MacMillan, 1984) by removing performance deficiencies; making employees stay long; minimized accidents, scraps and damage; and meeting future employee needs. This helps in developing greater stability, flexibility and capacity for growth in the organisation (Aswathappa, 2004).

It is evident that training and development play a vital role in bringing about the desired change in an organization and promoting empowered and engaged employees thereby building a strong culture for sustained organizational growth. Besides, training programs maintain, update and upgrade one’s skills throughout one’s employment. Therefore, a partnership between training and human resources is the key to organizational success.

While training makes an essential contribution to the business, it does not provide the complete solution for the development of a company’s employees. It is estimated that training probably accounts for about 10 per cent of development, while experience accounts for the remaining 90 per cent. However, this is a vital 10 per cent. Unless people have the skills, knowledge, and theoretical framework to make sense of what is going on around them, they cannot make the right decisions and take the right actions.

Besides, training helps to clarify the roles and duties of employees in an organization, resulting in improved productivity, through minimized job stress. Additionally, in a qualitative study involving mechanics in northern India, Barber (2004) found that on-the-job training led to greater innovation and tacit skills.

In this fast changing technological world, besides the working experience of the job, ability to learn new things is also important. This is because knowledge and skills of an organization's workforce has become increasingly important to build up a unique and differentiated position that can improve the standard and quality of service or
products, resulting in augmented performance, competitiveness, and innovation (Martocchio & Baldwin, 1997; Mathews, 2002; Taylor & Davies, 2004).

Workplace learning and non-stop improvement are important criteria for an organization to keep competitive (Salas & Cannon-Bowers, 2001). Training provides a platform to employees for communicating new organizational strategies, new values and new methods of performing their tasks. Thereby, bringing a change in employee attitudes and makes them keener in accepting and adopting new technologies (Ouadahi, 2008). Thus, employee training is considered as the leverage point by which training influences organizational performance (Kozlowski, Brown, Weissbein, Cannon-Bowers, & Salas, 2000 cited in Saks & Belcourt, 2006).

Learning new skills and interacting with different level of people has a positive influence on the productivity and development of an organization. It is undeniable that to continuously improve and maintain the quality of human resource, it is essential to invest in training and development for increased productivity of workers (Biggs, Manju, & Pradeep, 1995; Blunch & Castro, 2005).

Bartel (1989) and Bishop (1994) suggest that employer-provided training might increase productivity by as much as 16% if the training is transferred to the workplace. Besides, the studies at the individual level show that training increases employees' job performance, output and work quality (Burke & Day, 1986; Arthur et al., 2003).

In addition to increased performance, employees tend to be more loyal to organizations that show concern for their growth. The results of a study by Klein & Weaver (2000) showed that new employees who received orientation training were significantly more aware of organizational goals, values, history, and people besides having greater levels of commitment.

A well-structured job-related training can enhance the ability of problem solving of employees (Acton & Golden, 2002), leading to improved employees' retention (Gruber & Madrian, 1994; Madrian, 1994; Huselid, 1995; Choi & Dickson, 2010; Hong, Hao, Kumar, Ramendran, & Vimala, 2012) through enhanced motivation, satisfaction and commitment (Anis et al., 2011).
Besides, discouraging turnover by keeping current employees’ satisfied and well-positioned, training helps employees to work with little supervision and more commitment to the organization (Mikael, 2011). Several researches suggest a negative relationship between training and turnover: those who receive more training are less likely to quit than those who receive little or no training (Griffeth, Hom, & Gaertner, 2000; Batt, 2002; Allen, Shore & Griffeth, 2003; Deckop, Konard, Perlmutter, & Freely, 2006).

Organization’s long-term staffing needs can be ensured by providing relevant employee skill development training. It ensures the development of a rich and diverse talent pool by the organization and benefits them through improving employee satisfaction and retention. Besides reducing errors (Bassi, 1994), training helps organization reach the point of breakthrough achievements by providing employees with the skills, examples and opportunities to generate innovative ideas (Juran & Gryna, 1993). This can keep highly trained and motivated employees to help an organization to continuously go forward and become successful in the long run.

Training is a long-term investment (Nolan, 2002; Hamid, 2011) and its significance must consider more than immediate future. Besides, enhancing an individual’s growth and performance, training helps achieve some key business goals such as revenue generation through increased efficiency and effectiveness (Khan, Khan & Khan, 2011), decreased operational costs, limits organizational liabilities (Donald Nickels, 2009, cited in Khan et al., 2011), increased customer satisfaction and quality improvement (Knight & Salter, 1985, as cited in Sanders, 2011; Chen & Ro, 2011).

Replete literature has accepted the fact that employee training and development is an investment that benefits organization and its employees (Salas & Cannon-Bowers, 2001; Alipour et al., 2009; Hamidun, 2009; Hameed & Waheed, 2011). According to Hamidun (2009) it has been observed that employees who receive appropriate training are more confident in their tasks, which results in fewer mistakes, reduced rework and consequently leads to higher productivity. This further considerably reduces the cost associated with time, materials and support activities, besides improving employee satisfaction and providing a competitive edge to the organization.
Moreover, with today’s dynamic work environment, an investment in this domain has become even more pertinent for continual learning (Buckley & Caple, 2007) and growth. Amagada (2006) contends training to be the quickest way of acquiring skills and experience under supervision and supports all forms of education. Therefore, the key argument is that if employee training is an essential element in creating new knowledge and increasing productivity, enhancing organizational innovation, and profitability, so logically there should be sufficient investment to commensurate the benefits arising from it.

While there are many complex factors that affect the training process an important aspect is the outlook of human resource executives, chief learning officers and business leaders towards training (Salas & Cannon-Bowers, 2001). Therefore, the attitude of top management is crucial to the decisions and effectiveness of training and development.

For effective training, a positive perception of training needs to be creating in the employees, as engaged employees are both capable and willing to apply the learning outcomes, leading to success of a training programme (Sanders, 2011). Consequently, training needs to be seen proactively to be part of the corporate culture as well as tied to the business strategy and objectives and linked to bottom line results.

**2.4 - ROLE OF TRAINING METHODOLOGIES ON TRAINEES' PERFORMANCE**

Today’s knowledge economy considers people as one of the most valuable asset of the organization and various efforts are directed towards developing this key resource. The development of the knowledge economy has stimulated the demand for the new type of competencies, such as team work, interpersonal skills and the capability to work in a flexible environment (Karthikeyan, Karthi & Graf, 2010).

Research suggests that significant changes in the quality of human capital can be build in through proper training and this necessitates the designing of training so as to clearly impart high-impact information in a time- and cost-effective manner.
Petrakova & Sadana (2007) advocates that the quality of training and its impact on students is dependent on many factors including faculty, curriculum, training methods, teaching aids, facilities and the students themselves, who have their own experiences and expectations.

Moreover studies support the notion that an instructional intervention may facilitate learning in some individuals and not in others. This is because each individual possesses distinct aptitudes, abilities, and past history, and so they are likely to benefit from an instructional intervention in different ways (Katzell & Goldstein, 1989, as cited in Bennett & Arthur, 2001). Tailoring training methods according to trainee’s needs is critical in the success and ultimately the performance of trainees.

Training method is a way of getting information to the learners (Chow, Woodford & Showers-Chow, 2008). It is a process, technique or an approach which a trainer employs to deliver training content (example: lecture, online tutorials, videos, role-play to name a few). It consists of the techniques and materials used by trainers to structure learning experiences. Broadly, the various training methods can be divided into cognitive and behavioural approaches.

The cognitive methods help in delivering theoretical training and stimulate learning through their impact on cognitive processes. They provide information verbally or in written form, demonstrates relationships among concepts, or provide the rules for desired performance. Conversely, behavioural methods allow the trainee to practice behaviour in a replicate environment thus stimulating learning through experience. While lecture, discussion and e-learning (including both online and offline) are cognitive methods, role plays, business games, simulations and behaviour modelling are behavioural approaches.

Per se we find that there are numerous training methods. With the technological innovation and the needs of the new generation at work, new methods or variations are constantly being designed and developed. So, trainers today are faced with the dilemma over selecting training method(s); each with their own pros and cons in achieving the various learning objectives.

Vijayabanu & Amudha (2012) asserts that the right selection of teaching method is
essential for effective training. Because the effectiveness of training depends upon the method almost as much as the topic (Knight & Salter, 1985, as cited in Sanders, 2011), therefore, deciding upon a particular method or a combination of methods is central to the success of the training programme.

One of the significant reasons that the training does not transfer to the workplace, is the incorrect choice of the teaching method. Additionally, each employee is unique in the way they absorb information (Sanders, 2011), so a method should be chosen that will motivate employees to learn, help them to retain and transfer what they have learned and enhance their performance with the newly acquired knowledge and skills.

Furthermore, the effectiveness of a particular method is dependent upon the characteristics of the trainees as well as the program (Salehi et al., 2009). Therefore, trainers should consider both the trainee’s characteristics as also the training programmes learning objectives while adopting a particular method(s) of instruction.

With limited systematic research on the relative merits of various training programs, studies do suggest that the choice of training methodology has consequences on the degree of learning (Webster & Martocchio, 1993). Behnke and Ghiselli (2004) believe that the link that ties the student to the instructional objectives is the selection and utilization of an appropriate delivery method. It therefore becomes imperative for the present day organizations to explore the viability of the alternate training methods and their influence on learning performance as well as behavioural change.

Trainers are deeply sceptical about the effectiveness of the traditional instructional approaches. Jain (2006) says that, several educators and researchers are searching for alternative ways to present information, engaging trainees, and improving their performance. Given the abundance of delivery methods, both old and new, it is essential to compare the common traditional methods with the quickly evolving, new methods in order to determine their effectiveness and suitable use in a particular circumstance.

In order to cater to the needs of the multi-generational workforce in today’s organizations, trainers need to adopt a method which is convenient and relevant for the learner, cost effective for the employer and motivational in helping the learner
transfer skills and knowledge to the work environment (Sinniah, 2008). Although studies have been conducted to investigate the efficiency and effectiveness of the different training methods, results of the studies has been inconsistent as to which instructional method is “optimal” (Salehi et al., 2009).

Michel, Cater & Varela (2009) claims that while most organizations prefer providing on-the-job (active learning through coaching, job rotation etc.) training; but, for helping employees acquire high-level knowledge to advance in their careers, off-the-job training is more beneficial. In studies on the comparison of training methods, it has been found that most of them pertain to undergraduate and post graduate students (Rijamampionina, 2010).

A prominent investigation in this domain (on student population) was performed by Pang (2009) to assess the effectiveness of video-driven multimedia, web-based instruction in comparison with the traditional live instruction. He observed that the two methods were pedagogically equivalent in terms of knowledge gains.

Likewise, in 2010, Donkor too found that the two instructional methods (video-based instructional materials vis-à-vis traditional print-based) were comparable and pedagogically equivalent regarding their effectiveness in equipping distance learners with theoretical knowledge.

In a study examining the effectiveness of two educational delivery techniques (lecture and computer-based, internet delivered, self-directed learning) on undergraduate students via menu training; Benke & Ghiselli (2004) also found that either method is equally effective in attaining the desired level of proficiency.

In yet another similar study, Brittan-Powell, Legum and Taylor (2008) compared face-to-face and online learning for students with different learning styles on academic performance (course grade).

A 2 x 4 ANOVA revealed no significant differences for the main effect of Course Delivery Type, $F(1, 100) = 1.32, p > 0.05$. This finding is consistent with the results found by Manochehr (2006), Zacharis (2010) and Liang (2012) who suggest that students can be just as successful in the online environment as they can be in the
traditional lecture environment.

These findings further add weight to the argument of Clark (1983) that the media (e.g., video, computer, or oral tradition) are merely vehicles that deliver instruction but do not influence student learning.

In an analysis to examine the relative effectiveness of Web-based instruction over classroom instruction, Sitzmann, Kraiger, Stewart & Wisher (2006) scrutinized 96 published and un-published studies involving 19,331 trainees. They found that Web-based instruction was 6% more effective than classroom instruction for teaching declarative knowledge but was equally effective for teaching procedural knowledge.

In addition, Xakellis, Rickner, & Stevenson (2005) in a study compared the knowledge gained from CD ROM based lecture only, small group seminars only and from a combination of both methodologies among second year medical students and found that the post-test scores was greater for students who participated in combined modalities.

Simon, Grover, Teng & Whitcomb (1996) too observed a statistically significant difference in the performance of participants (U.S. Naval Construction Battalion) in the different training treatments (lecture, exploration and behaviour modelling, with trainees in the latter outperforming the trainees in the former two groups.

With the little empirical studies on employees in organizational setting, we observe that unlike the studies pertaining to college setting where a majority indicated similar learning outcome from different instructional methods, here we notice a deviation in the learning outcomes as a consequence of employee training with different instructional approaches.

In a study on the relative effectiveness of training methods, the response of 200 employees revealed that a significant difference exists between modern training methods and conventional training methods in terms of attaining training objectives, with on-the-job training (OJT) methods perceived to be more effective method than distance learning (Sinniah & Kaur, 2012).

King, Fisher & Garg (1997) examined the effects of three different types of training
methods (lecture, lectures with ergonomic job redesign and participatory training with ergonomic job redesign) upon employee knowledge. The pre- and post-test measures revealed a significant effect upon knowledge outcome.

Additionally, in a study on Extension personnel participating in an in-service training session, a 4x3 factorial ANOVA (at \( p = 0.10 \) level of significance) revealed a statistically significant effect on the final post-test scores of the participants in the three instructional methods (face-to-face, multimedia-rich and online) (McCann, 2006). In yet another similar study, the results indicated that discussion-based techniques were superior to lecture only (McKeachie, Pintrich, Lin, & Smith, 1987).

Moreover, in a meta-analysis of ninety five studies of health and safety training methods, Burke et al. (2006) found that active training methods (such as role-play) increased learning and decreased negative outcomes (such as injuries). Besides, as methods become more engaging (i.e., requiring trainees' active participation), workers demonstrate greater knowledge acquisition.

However, a few studies in the realm of employee training also indicated similar learning outcome, irrespective of the method employed. In 2003, DiPietro studied the effects of three alternative managerial training methods (traditional classroom training, computer-based interactive media training, and on-the-job training) on business outcomes in a fast food restaurant chain. He observed that there was no statistically significant difference in training outcome between different training methods.

Pfeifer (2004) too compared the effectiveness of two training methods (lecture and online modules) concerning the development of management soft skills, and found that both the methods resulted in comparable knowledge acquisition. However, considering the fact that most trainers as well as trainees indicate preference towards particular methods (based on their perceived effectiveness), it becomes imperative to investigate the practical efficacy of alternative instructional methodologies.

Taken as a whole, given the distinct advantages and disadvantages of each of the different instructional approaches, we observe that educators, trainers and researchers seem divided on the appropriate and effective training methodology. In a study on the
comparison of the pros and cons of some training methods, Salehi et al. (2009) found that the traditional face-to-face delivery method provides an opportunity for practice and feedback (Goldstein, 1993; Wexley & Latham 1991; Latham & Saari, 1979; Wagner, 1998; Olivero, Bane, & Kopelman, 1997), at the same time it is considered to be an inefficient (Schmeeckle, 2003) delivery method that incurs additional costs (Huang, 1997).

They also found that online training, which is considered to be one of the most efficient and effective (Schmeeckle, 2003) instructional method, requires trainees to be computer literate as also be self-motivated (Huang, 1997) in order to complete the training module, as it provides an isolated (Holden & Westfall, 2006) learning experience.

In a sharp contrast to the above observations, Trehan & Trehan (2010) state that considering the cost of training per trainee (which has always been the most crucial deciding factor), organizations generally resort to group training methods which generally includes lecture, role-play and group discussion. While lecture is the simplest mode of imparting knowledge to large number of trainees, deployed especially in the initial induction stage; role-play and discussions aid trainees in understanding the critical aspects of the actual work environment in detail through active participation.

On the other hand, videos and films demonstrate the preferred modus operandi expected of an employee in the workplace, and so provides information regarding the accepted behaviours desired in an organization. Besides, they also aid trainees to understand the key aspects that one needs to acquire to excel in their work, such as learning the selling process by a sales personnel or communication skills by a customer service executive.

An important dimension that determines the selection of an appropriate instructional method is its impact on the senses. The different training methodologies involve the different individual senses thus resulting in differences in retention of learning (Singh, 1998). As he puts forth, that if a method involves only hearing than 30% is retained; with seeing only, 40% is retained; while in case of hearing and seeing a 50% retention
of learning has been observed and finally in case of doing and experiencing, 80% is retained.

For the purpose of this research work, three instructional methods were adopted, viz. lecture, videos with discussion and role play based on the level of engaging the learners and retention of learning.

Lecture tends to be one of the oldest and most common instructional methods (Behnke & Ghiselli, 2004; Korte, 2006) and has been used as a basis for comparison in the majority of studies pertaining to comparison of training techniques (Sugrue & Kim, 2004). On the other hand, videos along with discussion provides an active learning platform as researchers like Mishra (2001) and Tooth (2000) assert that training videos are useful to illustrate practical and real life activities (as cited in Donkor, 2010), while group discussion aids in verbal interaction (Padilha, 2006).

Likewise role-play also provides trainees an opportunity to engage in active learning by encouraging employees to explore their knowledge and stimulate interpersonal interaction, communication and socialization (Wagonhurst, 2002; Olian et al., 1998, cited in Hamidun, 2009) thereby providing a means for highly engaged learning. The next section provides a description of these three instructional methods.

2.4.1- Training methods

The three instructional methodologies selected for this study are lecture (least engaging), videos with discussion (moderately engaging) and role-play (most engaging). Before carrying out a comparison of these methods, it is important to have a clear understanding of their role in the training process, and their likely impact as mentioned by previous researchers, along with their pros and cons.

LECTURE

Despite the increasing choice of alternatives, the rapid pace of change and continuous technological advances, the traditional face-to-face lecture method is still employed frequently by training professionals in formal training. In a survey, learners gave the highest ratings to instructor-led classroom delivery because of its face-to-face personalized nature (Gartner Group, 2000, as cited in Sinniah, 2008).
This chalk and talk teaching technique has been much-criticized (Friesen, 2011) yet flourishes in the training industry as one of the oldest and most common (Behnke & Ghiselli, 2004; Korte, 2006; Richardson & Kleiner, 1993), direct-instructional method.

Studies indicate that lecture method is as effective as other teaching formats for transmitting information (Eika, Wichmann-Hansen, Hoyer & Morcke, 2008). Dolezalek (2005) found that 70% of formal training in industry still takes place in a classroom with an instructor. One reason for its high preference is that lectures are relatively inexpensive means of content delivery (Behnke & Ghiselli, 2004).

They are also valuable at controlling and covering considerable content, time allocation, posing or answering questions, introducing topics, and presenting and summarizing problems (Charlton, 2006; DeLeon & Killian, 2000; Tyler et al., 2009) to a large audience (Behnke & Ghiselli, 2004; Goldstein & Ford, 2002) in a relatively short period.

Lecture is described as ‘a formally-structured mutually-beneficial ‘collusion’ between the learners and the lecturer resulting in improved learning’ (Charlton, 2006), which generally follows the deductive way to learning, that is, the learners proceed from general rules to specific examples (Chou & Wang, 2000). In other words, lecture can be defined as a ‘structured planned talk usually making use of visual aids, and/or without group participation other than through questions at the conclusion’ (Osborne, 1996, cited in Sinniah, 2008). A good lecture should be logically sequenced and should conclude with a summary of the main learning points and/or conclusions.

Lectures also facilitate in posing or answering questions and presenting and summarizing problems (DeLeon & Killian, 2000). Likewise, they provide a good platform with a live instructor, such that if trainees experience problems, they receive help on the spot (Snell & Bohlander, 2012). Besides, lecture may be an efficient method of delivering information in certain situations (Charlton, 2006; Goldstein & Ford, 2002; Tyler, Rowlands, & Spasoff, 2009) especially when imparting foundational topics for later use in concept development.

Lecture is a trainer controlled one-way communication method- from trainer to
trainees (Harris & Bonn, 2000). It is generally useful for presenting information from a subject matter expert to an audience unfamiliar with the topic and with little audience involvement (Richardson & Kleiner, 1993). To avoid a boring session, lecture must always be suited to the learners’ level in order to build upon the trainee’s existing base of knowledge.

Besides being an expert in the field, the trainer needs to be aware of his/her body movements and facial expressions. In a study by Tyler et al. (2009), he found that students preferred lecture method as they feel that the teacher showed greater interest and care as also guided them in learning. Besides, having better content and quality students felt that the lecture mode developed greater interest in the subject being taught and the understanding of the topic(s) also increased.

As with any method of instruction, lecture too has its strengths and weaknesses. Besides being time efficient (Richardson & Kleiner, 1993; DeLeon & Killian, 2000) and economical method (Goldstein & Ford, 2002; Behnke & Ghiselli, 2004), it has been found to stimulate and motivate trainees for learning (Held & McKimm, 2009) through real-time, human-presence, which makes it easier for most trainees to focus attention and remember what is said (Charlton, 2006).

An added advantage of the lecture method is the flexibility it provides (Richardson & Kleiner, 1993) and so lectures can be made interactive, where trainees can ask questions or have the presenter change the pace of the lecture, if necessary.

The disadvantages of lecture arise from the fact that it is a passive learning mode and does not engage multiple senses of the learner (Farrah, 2004). Lectures generally do not permit involvement (Richardson & Kleiner, 1993; Read & Kleiner, 1996) or participation which fails to capture and maintain the interest of adult learners. Being a one-way communication method (Richardson & Kleiner, 1993; Harris & Bonn, 2000), lectures may at times become rather monotonous and boring.

While this is not an inherent disadvantage of the method and is dependent on the expertise of the trainer; as lectures can be made interactive. The lecturer may bring in involvement by repeated questioning, providing interesting examples and linking the audience and their interests with the topic being imparted.
Adult learners are inquisitive about their performance, and lecture method fails to provide feedback (Read & Kleiner, 1996). Consequently, learners fail to be informed about their progress. Lastly, the learning rate associated with the lecture method is quite low (Richardson & Kleiner, 1993) and studies have revealed that people only retain 20 percent of what they are taught in a lecture. Piskurich (2000, cited in Sinniah, 2008), too states that instructor-led classroom training is not perceived to be an effective method; for knowledge acquisition and transfer.

ROLE PLAY

Watching someone else perform certain skills helps in learning, a concept commonly referred to as role play (Salas & Cannon-Bowers, 2001). This is another common training method which is described as a simulation of a particular event or situation. It is a structured method which allows employees to act out issues that could occur in the workplace.

Role play is an effective way to train (Almanza, Antun, Frash, & Kline, 2010; Prewitt, 2009) since it permits trainees to apply their learning in real job-like settings, created by taking into consideration both the content and the context of the work environment (Sanders, 2011).

Training programmes that depicts real work setting enable employees to learn more as they tend to face similar challenges as they may do in the real job situation. So, a role play provides the participating trainees to either portray someone else or themselves in particular circumstances. It therefore allows trainees to assume roles and act out parts in a realistic situation or setting (Read & Kleiner, 1996; Richardson & Kleiner, 1993).

Role play involves a training session where the facilitator, perhaps with an assistant or two, sets up a scenario where the participants are assigned different roles. The roles identify with those in the situation where participants will find themselves when they undertake their work in the field (Bartle, 2004).

First the trainees are assigned certain roles and are then provided with some information regarding the description of the character, tasks, objectives,
responsibilities and emotions; referred to as the briefing session. After understanding their role descriptions, they act out by interacting with one another. This facilitates in developing awareness and discussion of complex social issues in a non-threatening environment.

An important aspect of role play is the follow-up session or the debriefing stage, where everyone involved is given an opportunity to share their experiences of the role play situation. In this session the trainer also assesses the reaction(s) of the trainee(s) to various situations and discusses them along with the consequences. This debriefing session following the act encourages active participation and feedback (Read & Kleiner, 1996). Thus, role play permits trainees’ to apply their knowledge and practice skills (Richardson & Kleiner, 1993).

Most often teamwork, negotiation and interpersonal skills are developed by employing role play methodology. Bass & Vaughhan (1966, as cited in Pennathur et al., 1999) propose that role-play is particularly used for interpersonal problems, attitude change and the development of human relations. For this reason, it is employed by customer service employees in order to integrate new knowledge into their day-to-day activities while honing their interpersonal skills (Swink, 1993).

Role playing is also an effective instruction method that helps in connecting theory and practice. Besides being engaging and motivating (Clapper, 2010; King, King & Rothwell, 2001), role plays facilitate positive reinforcement (Read & Kleiner, 1996) as they resemble real world scenarios where mistakes are appropriately handled with feedbacks from the facilitator. In a study by Smith-Jentsch Salas, & Baker (1996, cited in Salas & Cannon-Bowers, 2001), they found that role playing with performance feedback was superior to a lecture only or lecture with demonstration format for training assertiveness skills.

Role play may assume a variety of forms, either depending upon the degree of structure or the number of participants. Depending upon the degree of structure role play may be structured or spontaneous.

A role play that provides trainees with a great deal of detail about the situation that has brought the characters together is a structured role play. Such a structured role
play also provides in greater detail each character's attitudes, needs, opinions and may even provide a scripted dialog between the characters. This type of role play is used mainly to develop interpersonal skills such as communication, conflict resolution, and group decision making.

On the other hand, a spontaneous role play involves loosely constructed scenarios in which one trainee acts while others portray people that the trainee has interacted with in the past (or will in the future). The primary purpose of this type of role play is to develop insight into one's own behaviour and its likely impact on others.

Furthermore even structured or spontaneous role play may differ depending on the number of trainees involved and may be either single, multiple or role-rotation format. In a single role play, one group of participants plays the role and provides demonstrations of the situation(s), while the rest of the trainees observe. While in a multiple role play, all trainees are in groups and each group acts out the role play simultaneously.

On the other hand, role rotation generally commences as either a single or multiple role play. After a while of interaction, the role play is stopped and the trainees discuss their actions and its consequences. They then again resume role play but after exchanging their characters or functions with another trainee. Thus, role rotation permits the learning and handling of issues from different perspectives and of different characters.

Role play is one of the most suitable methods to provide communication, sales and service skills training. In addition to combining technical and interpersonal skills, role play also provides an excellent platform for the participating trainees to practice customer and team interaction and develop empathy skills (Sanders, 2011). Active participation and feedback (Richardson & Kleiner, 1993) are attributes of role play which promote greater learning and higher retention.

Since role play simulates a real work like environment for trainees to act and carry out their tasks and responsibilities in almost real conditions. So, if a real situation arises, the individual will be aware of the likely action that s/he should demonstrate as well as will be more confident (Richardson & Kleiner, 1993) to take action.
Besides, role play enables finding a variety of solutions (Richardson & Kleiner, 1993), different ways of carrying out a particular task, as also the varied dimensions of a function or position. In short role-play is a versatile teaching model that can bring realism and insight into dilemmas and experiences that otherwise might not be shared (Snell & Bohlander, 2012).

However, as with any instructional approach, role play generally involves a great deal of time for the participants to prepare, enact and critique. And so this method entails a lot of time (Richardson & Kleiner, 1993), which is its major drawback. Besides, this debriefing may create a negative environment if the trainer is not able to handle the feedback session in an effective manner. This method is also not effective in situations where the trainees do not feel comfortable portraying in front of a group of people and so playing should be done in a low-stress environment, which makes it easier to learn.

VIDEOS CUM DISCUSSION

Another popular instructional approach involves audiovisual instruction which generally includes videos as a source of information and learning. Video based instruction has been found to teach a variety of skills and is based upon Bandura's (1977) observational theory of learning. It notes that student engagement in observational learning (or learning skills) is related directly to their observation of others performing those skills (as cited in Katsioloudis, Fantz, & Jones, 2013). They are useful to illustrate practical and real life activities (Mishra, 2001 and Tooth, 2000; as cited in Donkor, 2010) and provide the learners with the opportunity to play, replay, pause and rewind to specific sections of the videos (Hampton, 2002, as cited in Donkor, 2010).

Marshall & Cullen (2003) are of the view that video clips are predominantly relevant when the material of interest relates to human communication skills as they tend to have a significant advantage in ‘that they can be crafted to show very specific good or bad behaviours that might be difficult to observe in reality or which need to be studied repeatedly’. Several studies too indicate that the use of videos in teaching interpersonal skills had significant advantages over traditional classroom approaches (Cronin & Cronin, 1992; Campbell, Lison, Borsook, Hoover, & Arnold, 1995).
Tooth (2000) observes that video resources are expensive. However, Jung (2005) and (Blom-Hoffman, O’Neil-Pirozzi, & Cutting, 2006) suggests that the reuse of the video resources makes them cost-efficient. Moreover, Blom-Hoffman et al. (2006) also consider the video based learning to be time efficient besides providing a consistent intervention delivery.

Training videos are commonly used for improving communications skills, interviewing skills, selling skills, customer service skills and for illustrating how procedures (e.g., welding) should be followed. In order to make video based instruction an interactive process they are usually coupled with some other instructional approach, such as lectures to show trainees real-life experiences and examples (Noe, 2010).

Furthermore results from numerous studies indicate video-based instruction paired with feedback results in a more effective teaching tool (Whitehurst et al., 1988; Heubner, 2000; Heubner & Meltzoff, 2005). As group discussion provides a platform for effective feedback, therefore videos were coupled with group discussion was adopted as the third instructional strategy.

Small group discussion is a verbal interaction (Padilha, 2006) that allows learners to share their experience and ideas or to solve problem(s) through case studies or brainstorming. In other words, it is a group of up to six or seven people, who are engaged in more or less informal talk about one or more topics (Fay, Garrod, & Carletta, 2000; Padilha, 2006). So, this training method generally engages a group of people sporadically for a relatively short period of time in an unstructured conversation. It corresponds to the way in which opinions are produced, expressed and exchanged in everyday life (Flick, 2009).

A small group discussion mainly takes place in a classroom where the general idea is that each participant can act to stimulate ideas in the other people present, and that by a process of discussion the collective view becomes greater than the sum of the individual parts (Fay et al., 2000). Besides complementing the discourse and providing emotional content, group discussions help coordinate the turn-taking and so non-verbal behaviors play an important role (Padilha & Carletta, 2002).
It encourages active learning, helps to enhance problem-solving skills, develops communication and teamwork skills and instills interpersonal skills (Tyler et al., 2009) through the dynamics of interaction and participant engagement.

Generally a small group discussion commences with the division of the large group of participants into smaller groups of four to seven members (Fay et al., 2000) who are then informed about the discussion topic. Dividing a large group of participants into smaller working groups will help participants get the most from a training session. Within the stated time limit, the group members discuss the topic, without any involvement of the trainer except when the learners have queries. At the end, a summary of the findings of the group (which could be a solution to the problem or a summary of ideas) is given by any one member of the group.

Small group learning encourages deeper level of learning compared with lectures as students are encouraged to interact by discussing and interpreting results. Small group method also promotes and stimulates thinking, motivates interest in the subject, and teaches behavioural skills or assists in changing attitudes (Tyler et al., 2009). In addition, it has been found that students enjoy as also benefit from small groups (Luker, 1989; Griffiths, Houston & Lazenbatt, 1996, cited in Griffiths, 1999). Besides participation, group discussion allows for reinforcement and clarification through discussion.

An important aspect that advocates small-group discussions is its orientation towards student-centered learning, and provides the trainees with an opportunity to articulate and reflect on their own ideas thereby resulting in greater learning (Cross, 1987; Bennett et al., 2004; Khan & Sapna, 2010). During small group activities, participants have opportunities to interact and share ideas, think critically and solve problems, learn from each other and receive individual feedback on what they are learning. It is also a good way for knowledgeable veteran employees to pass on their experience to newer employees.

However, one drawback of the discussion method is that it is time consuming (Richardson & Kleiner, 1993) and the group may get off the topic which would then require the trainer to redirect the conversation. Another aspect that the trainer needs to take care is that group discussion should not be dominated by any one or two
members rather participants should be aware that everyone needs to be given a chance to state their opinions and listen to others, even if they disagree. Finally, artificiality (Richardson & Kleiner, 1993) may prevent trainees from providing realistic solutions to the problem at hand.

As can be observed from existing literature, every method of instruction has its own inherent strengths and weaknesses and appropriate selection of the delivery mode is an important factor in the success of the training. Besides, from the several research and anecdotal reports it can be concluded that certain training methodologies result in greater learning and the trainees experience greater satisfaction with the training process. Considering this fact, the present study intends to explore the viable differences in learning outcomes as a result of adopting different instructional approaches.

2.5 - ROLE OF TRAINEES’ CHARACTERISTICS ON PERFORMANCE

Jones, Jones, Latreille, & Sloane (2009) states that while the relationship between training and performance is complex, the profiling of workers and their training requirements may pay huge dividends to the organization. The characteristics that an individual brings to the training situation plays a critical role in the success of any training programme and a rich literature exits on studies relating training and performance with respect to individual characteristics.

Besides the demographic variables; trainee’s learning style, locus of control, self-efficacy and motivation (Mathieu et al., 1992) are some of the characteristics that have generated interest in researchers in the recent past. And several researchers have demonstrated the influence of these personal characteristics on training outcomes (Chou, 2001; Colquitt et al., 2000; Gagne, 1985, cited in Sadler-Smith, 1996; Salas & Kosarzycki, 2003).

The key component in designing training interventions is trainee characteristics (Cronbach & Snow, 1977; Noe, 1986) and individual learning styles is an important factor in understanding how students perceive and process information in different ways (Ching-Chun & Gamon, 2002). According to Keefe (1979), learning styles are generally considered as “characteristic, cognitive, affective, and psychological
behaviours that serve as relatively stable indicators of how learners perceive, interact with, and respond to a learning environment” (Keefe, 1979, p. 4).

Moreover, several studies indicate that a correlation exists between performance and the method of instruction matched to the preferred learning style (Benham, 2002; Manochehr, 2006; Terrell, 2002).

2.5.1 - Learning styles

The idea that there exists an individual difference in learning dates long back in history. As early as 334 BC, Aristotle noticed individual differences in young children and said that “each child possessed specific talents and skills” (Reiff, 1992, cited in Cambiano, De Vere, & Harvey, 2001). Then the last quarter of the 20th century brought the most interesting ideas and emphasized the identification of characteristics that affected how children and adults learn. These came to be called cognitive styles that later on developed into the concept of individual learning style.

For many years, educators too have noticed that all human minds work in a different way (Gardner & Korth, 1999) and that some students prefer certain methods of learning more than others (Shell, 1991; as cited in Akkoyunlu & Soylu, 2008). An accepted fact by educational psychologist is the fundamental differences that individuals exhibit to learning that opposes the concept of ‘one-size-fits-all’ (Felder & Brent, 2005; Melis & Montheartich, 2004). Besides, there exists a general understanding amongst educators that the manner in which individuals chooses to or is inclined to approach a learning situation has affect on their performance and achievement (Cassidy, 2004).

As such, an understanding of the learning style distribution is essential to improve the quality of instructional strategy (Kofi & Kohl, 2006, as cited in Tyberg, 2012). And, for effective learning to take place, it is critical to consider the learner’s characteristics in the development, design and delivery of a training programme (Buch & Bartley, 2002; Jackson, 1995).

One of the most prominent concepts of individual differences that have been intensively studied in educational psychology is learning styles. For three decades the
concept of learning style has attracted significant attention from educators and researchers (Cassidy, 2004; Melis & Monthienvichienchai, 2004; Rayner & Riding, 1997; Stahl, 1999; Sternberg & Grigorenko, 2001; Wilson, 1998; Wilson, 2012) as a way of describing individual differences in learning (Bostrom, Olfman & Sein, 1993; Desmedt & Valcke, 2004; Diaz & Cartnal, 1999; Kolb & Kolb, 2005a, b).

Moreover, a number of studies in educational settings indicate that learning style is a valid psychological construct (Sims, Veres, & Shake, 1989) and is different from ability or intelligence in that one's learning style is not presumed to be preferable nor inferior to another, but is simply different, with different characteristic strengths and weaknesses (Felder & Brent, 2005), that is, it is not value-directional (Messick, 1994).

Learning style basically refers to consistent individual differences in the way individuals approach learning tasks (Kolb, 1984; Price, 2004). It is the way in which an individual learner mentally concentrates on, process, understand, internalize, and remember new knowledge and skills (Dunn & Griggs, 2000; Felder & Brent, 2005; Jensen, 2003; Matheos, Daniel, & McCalla, 2005).

Every person has his or her own individual way to learn (Barmeyer, 2004), to perceive and process information (Kolb, 1984), through 'which an individual characteristically acquires, retains and retrieves information' (Felder & Henriques, 1995) in conditions under which one is most likely to learn (Stewart & Felicetti, 1992). In short, learning styles are not concerned with "what" learners learn, but rather "how" they prefer to learn.

Kolb asserts (2000) that an appreciation of differing learning styles can help people to work more effectively in teams, resolve conflict, communicate at work and at home. So, learning styles should be considered by training managers (Bohlen & Ferratt, 1997) as it provides important information to the trainers (Buch & Bartley, 2002) about both individual learning, and learning as a group in the classroom and/or organisational environment.

Further, an understanding of the learning styles of the learners facilitates the instructor or designer to develop a curriculum to address diverse needs of the learners (Pallapu, 2007) and aids them in the proper selection of techniques and methods of instruction.
(Alfonseca, Carro, Martín, Ortigosa, & Paredes, 2006) to suit the preferences of the different individuals.

Moreover several studies have claimed positive improvements in individual performance when novel concepts are illustrated in their preferred style (Cassidy, 2004; Davis, 2006; Pallapu, 2007; Tie & Umar, 2010). Being an important determinant of educational attainment (Dunn & Dunn, 1993, cited in Rassool & Rawaf, 2008), it has been found that a match between learning style and teaching style reveals increases in student achievement, satisfaction and motivation (Felder & Henriques, 1995; Lindsay, 1999, cited in Manochehr, 2006).

In a meta-analysis of 42 experimental studies spanning from 1980 and 1990, Dunn et al. (1995) found “that matching students' learning-style preferences with educational interventions compatible with those preferences is beneficial to their academic achievement” (p. 353). The different learning styles influence students' engagement in understanding the programming concepts; significantly affects information retention and consequently their academic achievements.

A relatively recent study by Demirbas & Demirkan (2007) in the academic context of design education shows the impact of learning styles on academic performance. Since, individuals differ markedly in the ways they learn, considering learning styles in training will have important implications for the training of employees, and ultimately the success of organisations (Pipoli & Flores, 2005). Therefore, to maximize the benefits from training, it is vital to adopt different ways to teach each individual in a different way depending on his or her learning style.

Over the years, a number of different learning styles theories have emerged with more than 70 learning styles models (Bostrom & Lassen, 2006; Coffield, Moseley, Hall, & Ecclestone, 2004) and over 30 learning styles assessment instruments in the past three decades (Coffield, et. al., 2004; Felder & Henriques, 1995). One of the most popular learning style inventories is the Kolb Learning Style Inventory (LSI) (first version: 1976) (Kolb, 1976, 1984) which has been credited as one of the central theories used by educators to understand the influence of the nature of the educational environment (course modality) on student learning (Wierstra & DeJong, 2002).
Kolb’s theory and learning style is a cognitive learning style mode (James & Gardner, 1995) which is “highly productive” (Coffield et al., 2004) and has been used in a majority of studies on learning styles in diverse fields such as management development (Reynolds, 1997, as cited in Coffield et al., 2004), management learning (Vince, 1998; Kayes, 2002), business education (Duff & Duff, 2002) business school and community (Yuen & Lee, 1994), and cross-cultural learning (Yamazaki & Kayes, 2004; Yamazaki, 2005) (as cited in Yamazaki, 2010).

It is the most influential and widely used instruments to measure an individual’s learning preference (Kayes, 2005; Lu, Jia, Gong, & Clark, 2007; Wilson, 2012). His model has survived examination and criticism over the years and is used extensively to categorize the way learners take in and process information (Liang, 2012).

Jarvinen (1998) points out that Kolb’s theory has not only been employed in the field of adult education but also in that of education in general. More than 3,500 studies have examined and cited this learning style model (Kolb & Kolb, 2013). Consistent with this number, the citation analysis made by Desmedt & Valcke (2004) concludes that Kolb is the most cited author in the literature of learning styles.

2.5.2 - Kolb’s Experiential Learning Model

Kolb’s "Experiential Learning Theory (ELT)" is a popular theoretical framework of learning styles (Claxon & Ralston, 1978; Svinicki & Dixon, 1987) and an effective model for teaching (Sugarman, 1985). ELT defines learning as “the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (Kolb 1984).

Kolb’s dissatisfaction with the traditional methods of teaching management students instigated him to experiment with experiential teaching methods. Salter, Evans, & Forney (2006), state that Kolb (1984) considers learning to be a “four-step cycle that consists of concrete experience (CE), a feeling dimension; reflective observation (RO), a watching dimension; abstract conceptualization (AC), a thinking dimension; and active experimentation (AE), a doing dimension” (Salter et al., 2006, p.175).

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In 1973, David Kolb developed the Learning Style Inventory (LSI-1) to assess individual learning styles based on the theory of experiential learning, which means 'relating to or resulting from one’s experience'. He observed that some students had definite preferences for some activities (example: exercises), but not others (example: formal lectures): ‘From this emerged the idea of an inventory that would identify these preferences by capturing individual learning differences’ (Kolb 2000).

**FIGURE: 2.1 - KOLB’S LEARNING MODES AND STYLES**

![Diagram of Kolb’s Learning Modes and Styles]

Based on the concept of David Kolb, 1984

His theory of experiential learning is based on the studies of Kurt Lewin, John Dewey, and Jean Piaget (Kolb & Kolb, 2005a, b).

Kolb was primarily influenced by Piaget’s theory that a direct relationship exists between intelligence and experience (Kolb, 1984). The main premise of Piaget’s genetic epistemology was that learning was a balance between the process of
accommodation of concepts to experience and the assimilation of events and experiences into concepts (Perantoni, 2010). From John Dewey’s theory of pragmatism, he drew the notion of experience as an organising focus for learning and from Lewin’s social psychology, the idea of action research (Coffield et al., 2004).

Kolb (1984) believes that learning occurs from the transformation of experience which occurs through the relationship of an individual’s learning processes, as differing along the two dimensions: preferred mode of perception (concrete to abstract) and preferred mode of processing (active experimentation to reflective observation). The dimension on the horizontal axis is concerned with an individual’s preferred method of processing information. While the left end of this dimension specifies a preference for ‘learning by doing’ (Active Experimentation, AE), the right side signifies a preference for ‘learning by watching/listening’ (Reflective Observation, RO).

On the other hand, the dimension on the vertical axis is concerned with individual’s information perception. The top end of the dimension represents a tendency towards feeling mode (Concrete Experience, CE), whereas the base represents preference for the thinking approach (Abstract Conceptualization, AC). So, AC and CE are two modes of grasping experience, AE and RO are the modes of transforming experience. In other words, the horizontal dimension represents an individual’s reaction to his or her environment while the vertical dimension represents the preference for logic or emotion (Hauer, Straub & Wolf, 2005).

The learning style of an individual is determined by obtaining scores on these bipolar learning dimensions, that is, one’s preferred mode of perceiving information (through concrete experience or abstract conceptualization) [the vertical axis] and processing information (through reflective observation or active experimentation) [the horizontal axis] in learning from experience and mapping them on a grid. Thus the inventory helps to interpret and reflect on the way that one prefers to learn in specific settings.

2.5.3 - Learning Modes and Styles

Akkoynunlu & Soylu (2008) states that Kolb’s experiential learning model is designed to place people on a line between the four modes. The various combinations among
the four key learning modes within each of the two dialectical dimensions results in
the emergence of the four distinct learning styles - accommodating (CE and AE),
diverging (CE and RO), converging (AC and AE) and assimilating (AC and RO)
(Chang, Wen & Chen, 2011; Corbett, 2005; Miller, 2005; Kolb, 1976, 1984; Kolb,
Boyatzis, & Mainemelis, 2000; Kolb & Fry, 1975, as cited in Richmond, &
Cummings, 2005; Kolb & Kolb, 2005a, b; Yamazaki, 2010).

Since each learning mode is incorporated within more than one learning style, it is
necessary to first understand the four modes before discussing the four learning styles.

1. The Learning Modes

1. Concrete Experience (feeling)

Concrete experience (CE) individuals rely on judgements based on feelings and
experience as opposed to thinking. Kolb (1984) describes them as intuitive decision
makers, who value circumstances involving people in real world situations. These
learners are empathetic, enjoy opportunities involving interpersonal interactions, do
well even in unstructured situations and take an intuitive open-minded approach to
problem solving.

2. Reflective observation (watching):

In Reflective Observation (RO), the individual is patient, impartial and values
objective judgment. As they prefer abstract understanding over practical applications,
so they are good at looking at things from different perspectives and appreciating
different points of view. They like to rely on their own thoughts and feelings to form
opinions through careful observation of others their own experience (Kolb, 1984).

3. Abstract conceptualization (thinking):

Abstract Conceptualisation (AC) involves the logical analysis of ideas, rather than
feelings, to understand problems. This learning mode is characterized by a preference
to depend on cognitive rather than emotional skills. People in this mode value
precision, rigor and discipline for analyzing ideas, and well defined conceptual
systems (Kolb, Osland & Rubin, 1995). Individuals oriented towards abstract
conceptualization typically attend to tasks that involve the use of "systematic planning, manipulation of abstract symbols, and quantitative analysis" (Kolb, 1984).

4. **Active experimentation (doing):**

People with active experimentation (AE) orientation emphasize practical applications or solutions rather than reflective understanding of a problem and prefer to focus on actively influencing people and changing situations. They are pragmatic and possess the ability to manipulate their environment to produce productive results (Kolb et al., 1995). As such, they are willing to take risk to achieve their objectives.

II. **The Learning Styles**

1. **ACCOMMODATING.** The Accommodating style’s dominant learning abilities are Concrete Experience (CE) transformed by Active Experimentation (AE). They are categorized as learners who prefer to learn by doing and feeling (Aşkar & Akkoyunlu, 1993; Hsu, 1999; Chen et al., 2005). They prefer to work with others and enjoy finding out new experiences (Kolb, 1984; 2000; Kolb & Kolb, 2005a, b). Accommodators are risk-takers (Smith & Kolb, 1996, as cited in Koob & Funk, 2002) and prefer practical hands-on approach in solving problems (Chen et al., 2005; Kolb, 1984; Kolb & Kolb, 2005a, b; McLeod, 2010).

They have an inherent tendency to act on intuition/ "gut"- feeling rather than approach a situation based on logical analysis. Therefore, they usually act fast and solve problems in trial-and-error manner. People characterized as accommodators are social in nature and possess an innate ability to adapt themselves to varying situations (Kolb, 1984; Litzinger & Osif, 1993; Kolb et al., 1995; Kolb, 2005; Richmond & Cummings, 2005).

As opposed to assimilators, the accommodators rely heavily on other people for acquiring information (Grochow, 1973 and Stabel, 1973, cited in Richmond & Cummings, 2005; Kolb et al., 1995; Kolb & Kolb, 2005a, b; Schaller, Borun, & Allison-Bunnell, 2007). These learners are good with complexity and are able to see relationships among aspects of a system. Instructors working with accommodators may expect devil's advocate type questions, such as "What if?" and "Why not?" (Kolb
et al., 1995; Litzinger & Osif, 1993). The most outstanding strengths of accommodators are practicality, leadership, meticulous planning and the courage to take risks (Kolb, 1984; Kolb, 1993).

In formal learning situations, people with accommodating learning style prefer group work and like to set goals, participate in field work and test different approaches to complete projects (Druzhinina, 2009; Kolb, 1984; Kolb et al., 2002). Training methods that encourages independent discovery or allow them to be an active participant in the learning process are best suited for accommodators.

2. DIVERGING. The Diverging style’s dominant learning abilities are derived from the combination of the learning modes- concrete experience (CE) and reflective observation (RO). They have been named “Diverging” since they perform better in situations that call for generation of ideas, such as a “brainstorming” session (Kolb et al., 2000). They are known to be feelers and watchers (Chen et al., 2005) and so prefer to observe rather than act and tend to be emotional (Kolb & Kolb, 2005a; McLeod, 2010; Richmond & Cummings, 2005; Smith & Kolb, 1996, as cited in Koob & Funk, 2002). These people are creative by nature (Kolb & Kolb, 2005a; Richmond & Cummings, 2005; Schaller et al., 2007) and prefer to work in groups (Schaller et al., 2007). They have a good imagination and are able to see concrete situations from different viewpoints (Kolb, 1984, 2000; Kolb et al., 1995; Litzinger & Osif, 1993; Richmond & Cummings, 2005; Smith & Kolb, 1996, as cited in Koob & Funk, 2002).

Diversers prefer information to be presented to them in a detailed, systematic and reasoned manner. Their inquisitive nature promotes them to explore situations, and an instructor who can motivate them to find answers to their “Why?” questions would be most suitable to guide them in learning (Kolb et al., 1995). Their instinctive questioning mind likes collecting information which enables them to build a repertoire of vast cultural knowledge. Among the remarkable strengths of diversers is creativity, understanding others, being aware of problems (Kolb, 1993) and flexibility (Kolb et al., 1995). They enjoy generating a multitude of divergent ideas on a scope through methods such as brainstorming (Kolb, 1984, 1993; Kolb et al., 2000; McLeod, 2010).
In formal learning situations, they prefer group work, listening with an open mind and receiving personalized feedback (Kolb, 1984; Kolb et al., 2000; Druzhinina, 2009). Small group discussions and brainstorming are methods of instructional that best encourage divergers to learn.

3. CONVERGING. They make use of abstract conceptualization (AC) in perceiving and active experimentation (AE) in organizing information. Convergers are thinkers and doers (Chen, Toh & Ismail, 2005). These people are practical by nature and prefer working alone (Kolb, 1984; McLeod, 2010; Schaller et al., 2007). Convergers favour distinct and clear tasks and prefer practical application of ideas (Kolb, 1984; Kolb et al., 2000; Kolb & Kolb, 2005a, b). An instructor who can be a coach and provide a lot of feedback would facilitate convergers in directing them to answer “How?” questions (Kolb et al., 1995). Generally, these people do well on standard conventional intelligence tests because they tend to have the ability to organize knowledge by hypothetical-deductive reasoning and thus are able to converge to a single correct solution (Chen et al., 2005; Kolb, 1976, 1984, 2000; Smith & Kolb, 1996, cited in Koob & Funk, 2002; Torrealba, 1972).

Convergers are well adept at controlling their emotions, and prefer to deal with technical tasks and problems rather than with issues that involve interpersonal and social interactions (Kolb, 1993, 2000; Kolb et al., 1995; Litzinger & Osif, 1993; McLeod, 2010; Richmond & Cummings, 2005). Kolb (1993) suggests that among their greatest strengths is their ability to efficiently solve problems, make decisions and apply realistic ideas to solve problems. Interactive and hands-on/practical instructional methods such as experiments in a laboratory, field work, simulations or computer-assisted instruction create suitable environment for convergers to learn.

4. ASSIMILATING. People with assimilating style are classified as watchers and thinkers (Chen, Toh and Ismail, 2005) who experience their world symbolically and transform information by thought process (Demirbas & Demirkan, 2007). They perceive information through abstract conceptualization (AC) and process by reflective observation (RO). Assimilators are intellectuals by nature who prefer to deal with abstract ideas and concepts and are characterized by their ability to reason inductively (Kolb & Kolb, 2005a; McLeod, 2010; Richmond & Cummings, 2005; Schaller et al., 2007; Smith & Kolb, 1996, cited in Koob & Funk, 2002). They like
accurate, organized delivery of information and are eager to get the 'right' answer to their problems.

Although, assimilators are less dependent on the instructor (Buch & Sena, 2001) than people with other learning styles, and they carefully follow prepared exercises, provided a resource person is clearly available able to answer their queries (Litzinger & Osif, 1993; Kolb et al., 1995). They aren't comfortable randomly exploring a system and generally give more importance to logical validity of theories than their practical value. They also possess the ability to assimilate disparate observations into an integrated explanation through inductive reasoning on the basis of existing concepts (Chen et al., 2005; Demirbas & Demirkan, 2007; Kolb, 1984; Kolb & Kolb, 2005a). They are good at planning, creating theoretical models, defining problems and developing theories (Kolb, 1993) but are less focused on people.

These learners prefer reading, lectures and exploring analytical models (Kolb, 1984; Kolb et al., 2000; Buch & Bartley, 2002; Kolb & Kolb, 2005a, b; Druzhinina, 2009; Nilson, 2010). Moreover, they also prefer lectures for learning with demonstrations where possible, and respect the knowledge of experts (Akkoynulu & Soylu, 2008). Assimilators learn best when guided by an expert instructor who is capable to answer their “What?” questions in a systematic and organized logical format such as PowerPoint presentations (Kolb et al., 1995). So, instructional methods suited to people with this style include printed materials (Buch & Bartley, 2002), lectures, exploring analytical models and lecture followed by a demonstration or an exploration of the subject.

In addition, there exists a lack of consensus amongst researchers and training practitioners regarding the nature of learning style development. While some consider learning styles to be fixed characteristics, others signify them to be stable, but not fixed along with still others who assert them as fluid, steadily changing trait as individuals mature and are exposed to various influences (Alaka, 2011; Charlesworth, 2008). Kolb’s (1984) theory is deeply grounded in the belief that learning styles are not fixed personality traits but rather one’s adaptive orientation to learning that gains stability overtime through transactions with the world. As a consequence, they can be thought of as individual preference to learning preference.
o, considering the learning styles of individuals can help a trainer to reach out to trainees and increase the effectiveness of the training. Although it is not feasible to design training modules according to each specific individual needs, especially in case where there are large number of trainees to be trained at a time. For this reason, trainers may design programmes and adopt methods of training keeping in mind the most prevalent learning style of the group.

For instance, in a study by Larkin & Budny (2005), they proposed that if the majority of students are assimilators or convergers, then group work would not work out very well. On the other hand, if the majority of the class tends to be accommodators or divergers, group work would probably enhance learning since these learners like to share ideas and concepts with one another. As studies have shown that accommodators and divergers are the ones who prefer social interactions through group work (Larkin & Budny, 2005; Schaller et al., 2007).

2.6 - LEARNING STYLES AND INSTRUCTIONAL INTERACTIONS

At the heart of the learning styles research is the theoretical orientation (Desmedt & Valcke, 2004) that learning styles must be seen as consistent and relatively stable individual differences in the way people learn. So, an important factor that any trainer/teacher should keep in mind is the innate differences that individuals possess in the way they approach a learning situation. A method may be more effective for an individual with a particular learning style but not for another with a different style of learning.

The learning style concept presupposes a causal relationship between a learner’s style, method of instruction and learner performance. This matching of style with instructional method is critical for achieving learner success. Saks, Haccoun & Belcourt (2010) also contend that trainees with different learning styles are likely to prefer different training methods (e.g. lecture versus role-play) and will differ in terms of the training method that will maximize their learning. In the field of research, the application of learning styles in education and learning is based on the concept of aptitude-treatment-interaction (ATI) research (Cronbach & Snow, 1977).
According to Cronbach (1957), who propounded the concept of "Aptitude-Treatment-Interaction" (ATI), it refers to any kind of pedagogical and psychological research which examines the relation of individual abilities and aptitudes with the application (or, treatment) of different teaching methods and learning objectives. Here "Interaction" is a statistical term meaning that there is some crossover effect besides the "main effects" of differences in general learning ability in learners, and differences in teaching quality in different teaching materials. While "Aptitude" refers to any kind of special learning ability that varies between individuals, the term "Treatment" refers to any teaching intervention in a study: whether different material, different tutor actions, etc.

Since, learning style is a type of aptitude-treatment interaction, in order to study its relationship with learning performance, it is critical to understand this concept. The concept of Aptitude Treatment Interaction considers that some instructional strategies (treatments) are more or less effective for particular individuals depending upon their specific abilities. In other words, it states that if a teacher matches instruction to the individual learning styles of his or her students, the latter will perform better (Cronbach & Snow, 1977).

So, we may say that Aptitude-treatment interaction suggests that a person’s distinctive characteristics or aptitudes (here, learning styles) can be matched to a specific treatment (instructional methods) in order to produce statistically improved outcomes (in this case, significantly improved learning) (Snider, 1990).

In short, the Aptitude-treatment interaction (ATI) research investigates the effects of learner aptitudes and traits on learning outcomes for different forms of instruction (Berliner & Cahen, 1973; Cronbach & Snow, 1969). Thus, the major assumption of this kind of research is that it is possible and desirable to adapt the nature of instruction to accommodate individual differences in terms of ability, style, or preference in order to improve learning outcomes.

Although the literature is replete with studies indicating the significance and relevance of Kolb’s theory and training methods on learning performance. But this section of the literature which comprises of the studies of the fit between learning styles and training methods is rather small (Coffield et al., 2004).
Furthermore, the literature on learning styles, instructional methods and performance has contradictory results—some negative and others more supportive. While studies by Loomis (2000), Dunn (2000) and Manochehr (2006) state that learning styles do affect learning; yet, some researchers found that there is statistically no significant relationship between learning style and learning performance (Desai, 1996; Shin & Gamon, 2001; Wang, Hinn, & Kanfer, 2001).

Prior studies in the area of learning styles and training have found that learning style is a good predictor of an individual's preference for an instructional method. Moreover, it has been found that if an individual is provided training by their preferred method of instruction, they are likely to demonstrate greater attention in the learning process and subsequently learn more.

In 2002, Buch & Bartley administered a survey to assess the training delivery mode preference of 165 employees in a large US financial institution. Based on their review of literature into the relationship between learning style and training delivery mode they hypothesised that accommodators and convergers would prefer computer-based learning, divergers would prefer classrooms and assimilators would choose print. Their study supported the notion that learning styles should be considered while making decisions about selection of the instructional method. Howsoever, an interesting revelation was an across-the-board preference for the traditional face-to-face classroom instruction over any other format.

In another similar study, Terrell (2002) investigated the participants during their coursework in an online learning environment. He found that converging and assimilating participants preferred online learning and were more likely to succeed than diverging and accommodating learners.

In addition to the studies which confirm a critical link between learning style and preferred method of instruction, several studies have also revealed significant differences in performance between trainees of different learning styles. In a study by Thomas, Ratcliffe, Woodbury, & Jarman (2002), students of different learning style were compared to their performance on the examination and the practical programming part of the introductory programming module. They showed
experimentally that there was a significant difference in performance between groups of students having different learning styles.

In another study, Sein & Robey (1991) who administered Kolb’s LSI to 80 undergraduate computer students in the US and then assigned them randomly to one of two different training methods. The results revealed that by tailoring instructional methods to accommodate individual preferences in learning style, the learning performance of students can be enhanced.

In a similar study, Rouke & Lysynchuk (2000) studied the effect of learning styles on success in web-based learning environments. Students whose learning styles were determined by Kolb Learning Styles Inventory were divided into two groups and took training in two different learning environments. The first group studied in a web-based learning environment, and the other group studied in a learning environment composed of printed materials. Then, both groups took an exam. The exam results showed that diverger students received high scores in both learning environments and assimilator students received low scores in both environments. These results indicate that web-based learning environments affect the success of learners having different learning styles.

Chou & Wang’s (2000) in a parallel study on the impact of learning style on learning performance among students of 10th grade in www homepage design confirmed a relationship between learning style and performance. Gender, in their study, was proposed as a moderating variable that would moderate the effects of training method and learning style on learning performance and computer self-efficacy. Male students benefited more from the instruction based and female students learned better in the behaviour modelling condition for performance. However, they didn’t find any difference in learning style between male and female’s performances.

In a quasi-experimental study, Katz (1990) examined 44 occupational therapy students in the US and 50 in Israel in order to test the hypothesis that students whose learning styles matched the teaching method would perform better (that is, more effectively). The results of the experiment supported the hypothesis that the better the match is between students’ learning style and instructional method, the more effective or efficient is learning (Katz 1990).
In another study on undergraduate students, a two-way ANOVA, where student knowledge (grade score) was identified as the dependent variable, yielded a significant main effect for learning style \[ F(3, 86) = 2.74, p = 0.048 \text{ in which } p < 0.05 \] (Manochehr, 2006). The study also revealed that assimilators and convergers performed better in the e-learning class, while students with diverging and accommodating learning styles received better results in the traditional classroom. At the same time, the study also found that different instructional mode do not significantly impact learning outcome.

Bohlen & Ferrat (1993) experimentally investigated whether end-user learning outcomes (i.e. achievement, efficiency and satisfaction) are affected by the methods of instruction, the user's learning style, or the combination of these two factors. The results of the study indicated that the method of instruction alone and in combination with learning style made a significant difference in some of the measures of achievement, efficiency and satisfaction.

While several studies support the argument that a match between an individual’s learning style and teaching method results in greater learning. At the same, some studies have also revealed an insignificant interaction between learning style, the preferred method of instruction and learning performance.

In a study, Brittan-Powell, Legum and Taylor (2008) compared face-to-face and online learning for students with different learning styles on academic performance (course grade). A 2 x 4 ANOVA revealed no significant differences for either the main effect of Course Delivery Type, \( F(1, 100) = 1.32, p = 0.85 \), or the main effect of Kolb learning style, \( F(3, 100) = 1.44, p = 0.47 \), or the interaction term \( F(3, 100) = 1.76, p = 0.69 \). The results suggest that learning style is neither significant in determining the preferred mode of instruction nor is it a significant factor in learning effectiveness and performance.

In another similar study, Liang (2012) also found that no significant difference exist between face-to-face and online learning environments, \( F(3, 176) = 0.687, p > 0.05 \). This means that students can be just as successful in the online environment as they can in the face-to-face environment regardless of their learning styles.
In 2006, McCann also found that a participant's learning style had no statistically significant effect on their final post-test scores in any of the three instructional methods (face-to-face, multimedia-rich and online); and no significant interaction was found between the learning styles and instructional methods. However, the 4x3 factorial ANOVA (at p= 0.10 level of significance) revealed that participants in the traditional lecture and the multimedia-rich environment had a statistically higher post-test score than those participants in a minimally interactive online environment.

In yet another study, Yilmaz-Soylu & Akkoyunlu (2009) carried out a single group repeated measures experimental design model with three different learning environments (text based, narration based and computer mediated (narration + music + text + static picture). The study group was studied in these three environments at different times and two instruments were used to collect data for this study. A pre-post test design was used to identify students’ achievement score and Kolb’s Learning Style Inventory was employed to assess the learning style of students. This study too found that the type of the learning style was not significantly effective on students’ achievement in different learning environments.

Despite the fact, that a rich literature exists in the domain of learning styles, the research in the field of learning styles, instructional methods and learning performance depicts a mixed picture of this part. While some studies support the notion of an interaction among these variables, others provide a contrary viewpoint.

Furthermore, most of the studies have been carried out on students in schools, colleges and universities, and only a few have been found on employees in an organization. Moreover, no research has been found in India, investigating the relationship between learning styles, method of instruction and learning. This sets ground for further research in this domain.

2.7 – EVALUATION OF TRAINING

In an environment driven by cost reduction and accountability, the evaluation of training becomes a crucial aspect of any training and development programme. Training evaluation basically entails the determination of whether training has met its desired objectives, whether the changes in knowledge, skills and attitudes are a result
of the actual training programme and the actual contribution the training programme to organizational goals and objectives. As a process it enables one to assess the worthiness of a training program.

With huge investments in the domain of training and development, it is imperative to carefully assess the investments incurred and the potential returns on the same. Furthermore, training evaluation helps identify the problems and strength of a training programme which may help a trainer in his future training (Al-Ajlouni, Athamneh & Jaradat, 2010) and so all good training and development programmes begin with the needs assessment and ends with the evaluation of training (Gopal, 2008).

Hamblin (1974, as cited in Ahmad & Din, 2009) writes that the process of evaluating training and development is ‘any attempt to obtain information (feedback) on the effects of training program, and to assess the value of the training in the light of the information obtained’. In other words, Patrick (1992, as cited in Sultan, 2011) describes training evaluation as an attempt to obtain information concerning the effect or value of training in order to make decisions about any aspect of the training program, the persons that have been trained and the organizations responsible for providing that training.

Similarly, Warr (1969, as cited in Ahmad & Din, 2009) puts evaluation as ‘the systematic collection and assessment of information for deciding how best to utilize available training resources in order to achieve organizational goals’. In short, training evaluation involves the measurement and assessment of the differences in a trainee’s skill, knowledge or attitudes as a result of the training intervention.

Evaluation of training encompasses more than the person being trained. Bramley (1996) proposes that the purpose of evaluation includes feedback, control, research, intervention and power games. Besides these different factors such as the nature and type of organization; trainers’ understanding of evaluation; conduct of evaluation; methodology for evaluation and availability of resources such as time, money along with personnel also effect the process of evaluation. It is therefore not just a corrective measure for the existing training programmes, but also as a proactive measure for designing and developing future training programmes.
Training evaluation provides feedback that allows to measure discrepancies and improvements, thus providing a total value of a learning event. As such it is vital to the success and continuing improvement of a training programme. Additionally, it has been found that evaluation ensures whether candidates have been able to implement their learning in their respective workplace or to the regular routines (Nagar, 2009, as cited in Topno, 2012).

Studies indicate that despite the fact that organizations spend enormously in training employees and the bottom line for any training and development programme is an improvement in the overall organizational performance, comparatively less attention is devoted to systematically evaluate their effectiveness (Sultan, 2011). Besides being a difficult endeavour (Bates, 2004; Foxon 1989) it is an extremely complex process and consumes additional time and money that are generally limited in supply (Bates, 2004; Sultan, 2011).

Given that, training is an investment so it becomes imperative to determine and monitor returns on this investment. For this evaluation of training is the sole approach which can determine whether a training programme has met the intended purpose for which it was deemed (Melvin, 1996). Thus evaluation of a training programme is critical to the economic survival of training departments.

Considering the significance of evaluation of training, several researchers and scholars have developed models for the same. However, prior to understanding the models of evaluation, it is necessary to recognize the two different types of evaluations- formative and summative.

The former is a process of judging the worth of a programme during the design, development and implementation stage and is also popularly referred to as process evaluation (Chevalier, 2004; Rajeev, Madan & Jayarajan, 2009; Seyfried, 1998). The purpose of this evaluation is to provide information to improve the quality and consistency of the training programme as also implement appropriate changes in future training (Chevalier, 2004; Rajeev et al., 2009). Formative evaluation may be done on the basis of reviews of expert, observations, pilot and field tests (Chevalier, 2004; Rajeev et al., 2009; Sultan, 2011).
On the other hand, summative evaluation deals the overall worth of the programme and is measured at the end of the training. Its focus is on the ultimate outcome which involves the desired changes in the individual and organizational performance. Summative evaluation is generally performed with quasi experimental research designs such as pre-test/post-test, randomized control group design, time series, or a combination of each (Rajeev et al., 2009). In the most crude form, Chevalier (2004) states that formative evaluation is ‘when the cook tastes the soup’, while summative evaluation is ‘when the customer eats the soup’.

2.7.1 - Models of training evaluation

Training evaluation is essential for organizations to evaluate its training programmes in order to justify the investments they make. Besides providing useful feedback to the trainers and management, it provides useful information for making requisite changes in the programme for future programmes (Gopal, 2008). Research indicates that training evaluation is the weakest and most under developed aspect of training, yet several different methods have evolved to ascertain the worth of the training programme (Iyer, Pardiwalla & Bathia, 2009; Topno, 2012).

Over the years, a number of different models have been proposed for evaluating training. One of the most popular models of training evaluation was proposed by Kirkpatrick (1959), which focuses on measuring outcomes in terms of trainee reactions, learning of knowledge and skills, on-the-job behaviour and organizational performance.

In 1970, Warr, Bird & Rackson proposed the CIRO (context, input, reaction and outcomes) model for the evaluation of managerial training. The model focuses on measurement both before and after the training has been carried out. Furthermore, the strength of the CIRO model lies in the fact that it considers the objectives (context) and the training equipment (input) (Tennant, Boonkrong & Roberts, 2002; Topno, 2012).

Yet another model that considers evaluation as an important aspect for improving the functioning of a training programme is the CIPP (context evaluation, input evaluation, process evaluation and product evaluation) model for evaluating training
(Stufflebeam, 1971). In recent years, with the increasing concern of organizations for financial accountability of a training programme (Phillips, 1997; Topno, 2012) proposed adding a fifth level- ROI (return on investment) to the most popular Kirkpatrick’s model for training evaluation.

Based primarily on measuring return on investment using quantitative methods (McDowell & Saunders, 2010), Phillips’s five level evaluation approach intends to translate the worth of training in monetary value (James & Roffe, 2000) and provide trainers with a logical framework to review ROI both from human performance and business outcomes perspectives (Topno, 2012).

In addition to these popular evaluation approaches, some less popular models also exist, which rely more on the theoretical perspective of evaluation, rather than the practical aspect. These include (Topno, 2012) the Training Validation System (TVS) approach (Fitz-Enz, 1994); Input, Process, Output/ Outcome (IPO) Model (Bushnell, 1990); Kaufman’s (Kaufman & Keller, 1994) five level (Enabling & Reaction, Acquisition, Application, Organisational and Societal Outcomes) evaluation model; Mahapatra & Lai (2005) model also with five levels (technology, reaction, skill acquisition, skill transfer and organisational effect) and Sadri & Synder’s (1995) model based on evaluating three conceptually different kinds of change: alpha, beta and gamma.

Although we find that numerous models are available for evaluation, but extant literature suggests the wide applicability of the Kirkpatrick’s four-level typology (Collins, 2002; Kaufman & Keller, 1994; Kirkpatrick, 1983; 1994; McDowall & Saunders, 2010; Phillips, 1997; Salas & Canon-Bowers, 2001; Sultan, 2011; Tamkin, Yarnell, & Kerrin, 2002; Topno, 2012; Tracey et al, 2001; Van Buren & Erskine, 2002). An important reason for its popularity with managers may be due to its summative nature and the fact that it follows goal-based evaluation approach which is based on four simple questions that translate into four levels of evaluation i.e. Reaction, Learning, Behaviour, Results (Brown & Gerhard, 2002; Sultan, 2011).

Adding to the strong appeal of this model, a survey by the American Society for training and development (ASTD) too concluded that Kirkpatrick’s four level evaluation approach is the most commonly used evaluation framework among
Benchmarking Forum Companies (Bassi & Cheney, 1997). Given the wide acclaim received by the Kirkpatrick’s model in the relevant literature, the present study also intends to evaluate the training programme based on this proposed model.

In 1976, Kirkpatrick segregated the evaluation model into four parts, viz. reaction, learning, behaviour and results. Reaction is concerned with evaluating the experience of the participants, that is, how trainees feel about or whether they liked the training programme they attended. The next level, learning evaluates how much the trainees learned from the training programme. Behaviour level evaluates the extent to which trainees applied the learning and changed their behaviour. And finally the result level of the evaluation assesses the effect on the business or environment resulting from the improved performance of the trainee that is, the utility of the training programme to the organization.

Despite the fact that “reaction measures are not a suitable surrogate for other indexes of training effectiveness” (Tannenbaum & Yukl, 1992), anecdotal and other evidence suggests that the most common way of evaluating training is through the reaction of the trainees towards the training programme (Arthur et al., 2003; Hashim, 2002; Rae, 1999; Rosti & Shipper, 1998; Rowe, 1996; Shelton & Allinger, 1993).

In a report by the American Society of Training and Development 78% of the benchmarking organizations surveyed reported using reaction measures, compared with 32%, 9%, and 7% for learning, behavioural, and results, respectively (Van Buren & Erskine, 2002). Arthur et al. (2003) are of the view that the wide use of level I in practice may be due to fact that it is proximal in nature and the information may be collected easily.

However, the present study attempts to assess the level of knowledge gained by the trainees, which is one of the key outcomes of training (Colquitt et al., 2000). And since learning criterion is the measure of the learning outcomes of training (Arthur et al., 2003), which may be defined in terms of knowledge acquisition (Tracey et al., 2001); so this study is based on the level II of Kirkpatrick’s evaluation model.

Alliger & Janak, (1989) define learning as “principles, facts, and techniques understood and absorbed by the trainees”. Consequently, learning measures are
objective, quantifiable measures of the learning outcomes, which may include changes in knowledge, skills or attitudes and helps determine the extent participants have advanced in skills and knowledge.

Evaluation at this level may take the form of formal examination, performance checks or peer evaluations that seek to comprehend how much trainees have really learned after attending the learning event. Glenn Crone (2006) and Topno (2012) suggests that the possible methodologies for evaluating learning includes pre-post testing, observations by tutors, managers and/or peers, team and self-assessment, interviews and surveys.

Jeng & Hsu (2005) states that level 2 evaluation attempts to differentiate between what participants already knew prior to training and what they actually learned during the training programme. In other words it can be said that learning evaluation is the measurement of the increase in the knowledge or intellectual capability from before to after the learning experience.

Evaluation should thus; focus on measuring what was covered in the training events i.e. learning objectives. Moreover, Warr & Bunce (1995) indicated that a strong association exists between learning and job performance (Level 2 and Level 3). This is further supported by Goldstein (1986, as cited in Pennathur et al., 1999) that the amount of transfer of training on the job is dependent on the learning during a training programme. As such, learning dimension was considered for this study.

2.8 – SUMMARY

The present chapter has reviewed abounding literature in the field of training, training methods, learning styles and evaluation models. With the increasingly dynamic workplace, more than ever before, today training is seen to be a pivotal tool for organizations to compete and attain a competitive edge. The rising cost of training has compelled trainers to seek training methods that may provide motivation to the employees both new and old to learn continuously. For this, the literature has revealed that an understanding of both training methods and learning styles is a prerequisite for successful knowledge acquisition and hence learning of the participating trainees.
CHAPTER 3

RESEARCH METHODOLOGY

INTRODUCTION
NEED FOR THE STUDY
RESEARCH OBJECTIVES
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SUMMARY
important to assess the varied methods to find their relative effectiveness in learning. Vijayabanu & Amudha (2012) too supports this and states that the right selection of teaching method is an essential ingredient for effective training.

Moreover while existing research and literature in the Indian context firmly establishes the importance of employee training and its influence on learning; however a commonly debated concern is which form(s) of training and training method(s) are most effective. Adding to this concern is the study by Basha (1971), which suggests that multinationals operating in India finds that their home- tested techniques do not have the same impact in the Indian context. Due to differences in culture and background business games, T-groups, case methods and workshops are not as effective as lecture- cum- discussion method is in India (Vijayabanu & Amudha, 2012).

Adding to this concern, Knowles (1973) recommends that when creating learning activities, the training design should take into consideration unique characteristics of adult learners that increase with age, such as “style, time, place and pace of learning.” In the contemporary workplace, with rising emphasis being placed on training and developing workforce, it becomes crucial for organizations and training professionals to identify trainee characteristics that can help predict ability to achieve the desired levels of knowledge.

Extant literature too is suggestive of the fact that learning through training is dependent on numerous individual characteristics, such as learning style, locus of control, self-efficacy, existing level of education, experience, age, gender, etc. Every individual differs in their style of learning (Pashler, McDaniel, Rohrer, & Bjork, 2008) and for effective learning it is critical to consider the learner's characteristics (specifically learning style) in the development and delivery of a training programme (Buch & Bartley, 2002).

Kohl & Kohl, (2006, as cited in Tyberg, 2012) too recommends that an understanding of the learning style distribution is essential to improve the quality of instructional strategy. Furthermore, Borchert, Jensen & Yates (1999) states that the learning preference of a student has strong impact on knowledge retention. Consequently,
seeing the importance of individual learning styles, the present study has considered it as an important factor contributing towards learning.

The need for understanding the complex relationships between individual characteristic (learning style) and instructional methods used, on learning outcomes in formal training activities has necessitated this study. Moreover, most of the research has been carried out in the western context, that too on students in schools and colleges. And even among the limited number of studies on employees is in the context of end user computing (EUC), with most comparing traditional lectures with web/ computer-based training with learning styles (Henke, 2001) on learning outcomes (Rouble & Stout, 1993; Gururajan, 2001) and EUC satisfaction (Hsu et al., 2004; Simon, 2000). This research intends to fill the void by providing an insight on training methods and learning styles on learning performance in the Indian context.

Replete prior studies also reveal that if the training delivery method is in accordance to an individual’s learning style, they learn better (Danish, Awan, 2008; Suskie, 2009; Robotham, 2009; Malik & Janjua, 2011). An understanding of how adults learn will help organizations and training professionals to develop training curriculum that encourage the transfer of learned knowledge to practical application. Besides, the information gleaned from the study will gauge the best methods of instruction that may be used to impart training to trainees of a particular style.

3.3 - RESEARCH OBJECTIVES

After a review of extensive literature review, it was realized that the training industry in India has matured considerably over the past years. Furthermore a number of studies were found indicating a robust increase in the interest of both trainers and researchers. Howsoever, most of the literatures were either related to the domain of training effectiveness. An important dimension of training effectiveness is the factors related to training design and individual trainee characteristic.

While studies considering these variables exist in the European and American context, however, no empirical study could be traced on the same in India. Therefore to address the need of this domain, the present study has been undertaken to fill the void.
in this field of literature. Considering these gaps, the following research objectives have been proposed:

1. To assess the relationship of training methodology and learning styles, both individually and in combination on learning performance in Indian organizations.

2. To gauge if a relationship exists between the learning styles of employees in Indian organizations and their preferred training methodology.

3.4 - CONCEPTUAL FRAMEWORK

The review of existing studies presented in chapter two sets the ground for the purpose of this study, the key areas of theory that has composed the theoretical background include training, training methods, adult learning, learning styles and learning performance. The present study has juxtaposed these areas to demonstrate how organizations and training professionals may broaden their understanding of the complex relationships between training methods and individual learning styles on learning performance, thereby accomplishing the needs of adult learners in today's dynamic workplace.

The review of literature leads to the formulation of a theoretical scheme for the research problem and serves as the basis for the formulation of the conceptual framework and the research hypotheses. The conceptual framework expands upon the research problem as it associates to pertinent literature review and offers a synopsis of the study's main points. Sanchez (2001) states that a conceptual framework is the researcher's new model that has its roots in the previous models which the researcher has studied. Therefore, the conceptual model is a visual depiction of the relationship between the key variables that have been identified to be part of the study.

Figure - 3.1 presents the conceptual model for this study which serves as the visual representation of the five hypotheses outlined in section 3.6. The diagram also shows the central factors influencing the relationship of the primary variables or constructs and how all relate to the proposed hypotheses.
For the purpose of assessing the relationship between training methodology and learning style on learning performance, the above conceptual model has been proposed. The main factors are training methodology, individual learning styles and learning performance. The dependent variable is learning performance and the independent variables are training methods and learning styles. Following is a brief description of the variables of the conceptual model:

**FIGURE: 3.1 - CONCEPTUAL MODEL**

![Conceptual Model Diagram]

*Training methodology* – For the purpose of comparison, three training methods have been identified to part of the study. They’ve been selected on the basis of the study by Rijamampianina (2010) which found that only three of the twenty learning methods showed a relationship with learning styles. These were learning from videotape material, from lecture or by role-playing.

*Learning styles* - This was suggested as one of the ‘cognitive traits’ in Posner and McLeod’s (1982) taxonomy. The two dimensions of the Kolb’s experiential learning
theory (1984), information perception and information processing lead to four learning styles: accommodating, diverging, assimilating and converging. These four learning styles have been considered for the purpose of this study.

*Learning performance* - A typical method of measuring competency is through learning performance (Simon, Grover, Teng & Whitecomb, 1996). So this study has considered evaluating the effectiveness of training along this dimension. This was adopted from the level two of the evaluation model of Kirkpatrick (1994). A general and procedural knowledge based questionnaire was designed and the participants were graded based on the degree of correctness.

3.5 - RESEARCH QUESTIONS AND HYPOTHESES

This section will present the research questions and hypotheses that have been proposed to guide this study. A total of five research questions and five hypotheses have been suggested in light of the conceptual model proposed and described above.

Vijayabanu & Amudha (2012) suggests that ‘training’ supports the development of human asset and well-trained employees are valuable assets of an organization (Ndumuju, 2009). Furthermore organizations will struggle to survive and thrive in times of change and uncertainty, if they do not provide regular training to their employees in order to meet the demands of the dynamic marketplace.

From a strategic perspective as well, acquiring up-to-date knowledge becomes increasingly important because the intellectual capital of organizations is one of their key assets in global competition. And since, knowledge acquisition is both a short-term result of training and an important prerequisite for successful transfer of training (Kraiger et al., 1993). So the first research question and the hypothesis deem to find if the training led to definite increase in the level of knowledge of the trainees.

1. Is there an improvement in the learning performance of trainees after the training intervention?

H10: There does not exist any difference in the learning performance of participants between the pre-test and the post-test scores.
H1: There exists a difference in the learning performance of participants between the pre-test and the post-test scores.

Chou & Wang (2000) suggests that the choice of training method has consequences on the degree of learning. Likewise, Vijayabanu & Amudha (2012) also propose that for training to be effective, the selection of the right teaching method is crucial as the type of training method has an influence on the impact of training. Further, the effectiveness of the different training methods vary considerably with respect to different training objectives (Carroll et al., 1972; Perdue & Woods, 2000) and so different training methods may lead to differences in learning performance.

In India, despite a large number of studies exist on the relationship between training and individual/organizational outcomes, there appears to be a gap, concerning the study of training methods used with respect to learning performance. The purpose of this study is to shed more light into this relationship thereby close this gap in the relevant literature. The second research question and the subsequent hypothesis originate from this concern.

2. Is there a difference in the learning performance of trainees based upon different training methodologies?

H2a: There does not exist any difference between the mean learning performances of trainees in the three instructional groups.

H2b: There exists a difference between the mean learning performances of trainees in the three instructional groups.

Practitioner articles and journals often suggest that individual differences in learning styles is an important factor being considered in recent times, as it influences the effectiveness of any professional training or educational programme (Kim & Sonnenwald, 2002; Robotham, 2003). Dunn, Griggs, Olsen, Beasley, & Gorman, (1995) describe learning style as the “way in which each learner begins to concentrate on, process, and retain new and difficult information”.

Likewise, Fleming (2001) and Fuller, Norby, Pearce, & Strand (2000) also suggest that learning styles indicates how each individual acquires and passes knowledge
in their own distinct way. Furthermore, research signifies that learning styles are individual preferences and tendencies that influence learning (Smith, 1982; Robotham, 2003) as well as has considerable impact on knowledge retention (Borchert, Jensen, Yates, 1999). Considering this influence, the next research question and hypothesis has been proposed.

3. Is there a difference in the learning performance of participants based upon their learning style?

**H3₀**: There does not exist any difference between the mean learning performances of trainees of different learning styles.

**H3₁**: There exists a difference between the mean learning performances of trainees of different learning styles.

In addition to the influence of learning styles on learning, several studies indicate that learning style can moderate the effectiveness of instructional methods on learning outcomes (Bohlen & Ferrat, 1993; Hayes & Allinson, 1993; Manochehr, 2006; McCann, 2006; Brittan-Powell, Legum & Taylor, 2008; Liang, 2012). Additionally, literature also supports that learning improves when learning style is supportive of learning method. However, the vast majority of these studies have been carried out on students in schools, colleges and universities (Collinson, 2000; Minotti, 2005), with limited studies on employees in an organization (Rijamampianina, 2010).

Moreover, no research investigating the relationship between learning styles, method of instruction and learning performance has been found in an India context. As this area has been rarely addressed in literature, it sets the ground for further research in this domain. The next research question and hypothesis pertains to this realm.

4. Is there an interaction between training methodology and learning style based upon the performance scores?

**H4₀**: There does not exist any difference in the learning performance of trainees with the different learning styles in the different training groups.
H4: There exists a difference in the learning performance of trainees with the different learning styles in the different training groups.

Finally, considering the fact that research indicates that training methodology must be adopted considering employees preferences for them, as they tend to learn better (Danish & Awan, 2008; Suskie, 2009; Robotham, 2009) the last research question and hypothesis has been framed to shed light on this aspect. Several researchers have documented that a strong relationship exists between learning style scored on the Kolb’s Learning Style Inventory (LSI) and learning method preferences in the workplace (Buch & Bartley, 2002; Bennett, 2008; Robatin, 2009). So, this last question mirrors the recent increase in interest in individual differences (due to learning styles) on preference for a particular methodology.

5. What, if any, relationship exists between adult learners having a particular style of learning and preferred mode of instruction?

H5: There does not exist any relationship between one’s learning style and preference for a particular instructional method.

H5: There exists a relationship between one’s learning style and preference for a particular instructional method.

3.6 - RESEARCH DESIGN

A research design encompasses the methodology and procedures employed to conduct scientific research (Research design, 2013). The research design of a study provides a specific blueprint for collection, measurement and analysis of data. It is used to structure the research, to show how all of the major parts of the research project – the samples or groups, measures, treatments or programs, and methods of assignment-work together to try to address the central research questions (Trochim, 2006).

In other words, a research design is the logic that links the data to be collected and the conclusions to be drawn to the initial questions of a study; it thus ensures coherence (Rowley, 2002). So, the most appropriate research design is selected based on the aims and objectives of the study.
A research design also defines the study type (e.g., descriptive, correlational, experimental) and sub-type (e.g., cross-sectional, longitudinal), research question(s), hypotheses, independent and dependent variables, experimental design, and, when applicable, data collection methods and a statistical analysis plan (Research design, 2013).

For the purpose of this study, a descriptive pretest-posttest evaluation case-study approach was adopted to investigate the relationship between the variable of interest as also to test causality with suboptimal control. Dimitrov and Rumrill (2003) state that 'pretest-posttest designs are widely used in behavioural research, primarily for the purpose of comparing groups and/or measuring change resulting from experimental treatments'.

A Case study research method "is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (Yin, 1984). It permits the study of a few cases for the analysis of many variables, thereby producing an in-depth knowledge.

A case study approach has been adopted as the research strategy, since it allows an empirical study of a phenomenon within its real-life context, here the training environment. It is also appropriate for individual researchers because it gives an opportunity for one aspect of a problem to be studied in some depth within a limited time scale (Bell, 1999) and when it is not possible to have large samples.

3.7 - STUDY POPULATION AND SAMPLE

Description of the Population

The population of the study were employees of different organizations, both services and manufacturing, who were trained during the period May 2012- May 2013 at two training centres in Ghaziabad (case study I & III) and Delhi (case study II). The sampling method for the study was a non probability convenience sampling. A convenience sample refers to a group of subjects selected on the basis of being
accessible or expedient (McMillan & Schumacher, 2001). This method of sampling was chosen because it provided me the only possibility for carrying out the study.

**Description of the Sample**

A sample is a part of the population whose properties are to be studied in order to gain information about the entire populace. When dealing with people, it can be defined as a set of respondents or representatives selected from a larger population for the purpose of a study. As this study adopted a case study approach, three different cases were developed for the purpose of generalization. Purposive samples of 66, 64 and 51 adult learners were selected to be part of the three case studies. A purposive sample is a type of non-probability sampling in which the researcher uses judgment in selecting respondents who are considered to possess sound knowledge and experience in subject areas related to the research (Rea and Parker 2005).

Moreover, the trainees selected for the study participated in only one of the three experimental conditions making the study a between-subjects design. Vernoy & Kyle (2002) are of the view that, a between-subjects design requires that “each level of each independent variable has different participants; thus, there is a distinct difference between each level of the experiment because each person participates in one and only one level” (p. 259).

In addition, the participants were randomly selected from the three training intervention groups, as this ensures that any effect observed between the treatment groups is due to the effect of the treatment and is not a characteristic of the individuals in the group.

For the purpose of this study, three case studies were conducted. The three different case studies were based on different group of employees related to different organizations. The target populations for each were employees who were currently employed in an organization.

**Case study I**

A training institute located in Ghaziabad, was considered to be part of the study. It specializes in providing soft skills training particularly interpersonal communications
skills. The sample selected for the present study was sales representatives of a pharmaceutical company.

A total of 66 newly recruited medical representatives were trained in the basic interpersonal communication concepts and skills in order to build profitable relationships with doctors through selling pharmaceutical products of their organization. The trainees were randomly selected from three different groups of trainees: A1- 23, A2- 22 and A3- 21. The participant trainees in A1 were given training with lecture method; trainees in A2 via videos cum discussion mode while those in A3 were imparted training through role-plays.

Case study II

Considering the boom of service industry and the rapidly increasing demand of customer service executives, a Delhi-based training institute which provided training in essential aspects of interpersonal communication skills was selected. Furthermore, interpersonal communication skills are a crucial training need in many service industry jobs as they aid in augmenting the value of the service job.

A total of 64 employees of a retail chain participated in the study. The subjects were randomly selected from three different groups: B1-22, B2-21 and B3-21. Lectures were imparted to B1 while trainees in the B2 group were trained through videos cum discussion approach and B3 through role-plays.

Case study III

The study of Indian industry would have been incomplete, without the inclusion of employees of a manufacturing company. A Group of 51 employees from a pharmaceutical manufacturing organization were trained in the basic concepts and application of interpersonal communication skills essential for building strong teams for enhanced cooperation and performance in the workplace.

The employees were randomly selected from three groups: C1-19, C2-16 and C3-16. A lecture was delivered to C1, while trainees in group C2 were engaged in learning
through videos along discussions. Role play was adopted to train employees in group C3.

3.8 - DATA COLLECTION AND INSTRUMENTATION

For the purpose of this study, a survey was conducted to collect the required data. The purpose of survey research is to generalize from a sample to a population so that inferences can be made about some characteristic or behaviour of the population (Babbie, 1990). Several statistical variables were collected, which may be broadly classified into three sections.

The first part involved the determination of the participants' learning styles, which are categorical nominal variables. This was accomplished by employing Kolb's Learning Style Inventory (version 3.1). The second component intended to gather data pertaining to demographics which included an ordinal variable, age and a binary variable, gender. This section also collected information regarding the most preferred type of instructional method by an individual. While the last section assessed the pre and post training knowledge through a knowledge test which was designed based on the objectives of the training. All the questions on the variables of interest were on a categorical scale.

3.8.1- Kolb's Learning Style Inventory (LSI)

Kolb's Learning Style Inventory, a statistically reliable and valid twelve-item questionnaire (Kolb, 2007), was used as an assessment tool to determine individual learning styles (see Appendix – B, Part I). Kolb's theory and his LSI was chosen for this study because his theoretical perspective focuses on the interaction between the learner and the learning environment (Kolb & Kolb, 2005b) which is similar to the interest of this study. It will help in determining whether students' learning style influenced their performance with different training methods.

Moreover, Desmedt & Valcke (2004) states that Kolb is the most cited author in the literature of learning styles. Furthermore, two specific reasons as offered by Harb, Durrant, and Terry (1993) are valuable in deciding the use of this theory in assessing learning styles. They suggested that educators should 'teach' to each of the learning
styles in order to ‘reach’ all students. The authors also believed that the model could very well serve as a framework for students’ lifelong learning experiences, which provides a promising future to today’s employees when organisations are venturing into a culture of continuous learning.

Kolb’s theory (based on experiential learning) shows the extent to which one emphasizes action over reflection and abstractness over concreteness when responding to a learning situation (Veres, 1991). An individual’s learning style (which may be diverging, assimilating, converging or accommodating) results from a combination of the four basic learning modes (concrete experience, reflective observation, abstract conceptualization or active experimentation).

**FIGURE: 3.2 - LEARNING STYLE TYPE GRID**

The instrument assesses the learning style of an individual by measuring the relative preference for use of the four modes (Kayes, 2005). The first version appeared in 1976 but due to low validity and reliability, subsequent versions appeared in 1985.
(LSI-2), 1993 (LSI-2A), 1999 (LSI-3) and 2005 (LSI-3.1). From the second version onwards, the LSI comprises of twelve (12) sentence stems and follows a forced-choice format (Kayes, 2005; Kolb & Kolb, 2005a). Each sentence describes a way of learning and the four options state the alternate patterns in which different individuals prefer to learn.

The LSI-2 (1985) entails the ranking of 48 short sentences about learning (comprising twelve sets of four alternative response), which can be completed and self-scored in a span of 10 to 15 minutes (Healey & Jenkins, 2000). It requires the respondents to rank their relative preference of the four alternative choices ranging from 4 to 1 according to how well each one fits the way one prefers to learn. A ‘4’ represents the highest level of similarity while a ‘1’ indicates the most dissimilar sentence.

Each of the four alternatives corresponds to one of the four modes of learning: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), or active experimentation (AE).

The calculation of the LSI score is a multistep process. It first involves assembling all of the scores of each of the 12 sentence endings corresponding to CE, in order to obtain the total score for CE. This is followed by the totalling of all the scores for RO and subsequently for AC. Then finally the composite scores are obtained for AE. After obtaining the total scores for each of the four learning modes, the difference between AE and RO as also AC and CE is obtained.

While the former determines one's propensity to either do or watch, the latter indicates one's propensity to either think or feel. The combination of these two score rankings is plotted on a graph and the intersection of the scores indicate the preferred learning style quadrant of the learner.

The upper left quadrant signifies and accommodating learning style while the upper right quadrant represents a diverging style of learning. In the lower quadrants, assimilating learning style is represented by the right quadrant, whereas the left side signifies the converging style of learning (Kolb, 1999).
3.8.2 - Knowledge Test

Kraiger, Ford, & Salas (1993) propose that traditionally in the domain of training and development, knowledge acquisition is generally assessed through achievement tests administered at the end of training. And since in the present study, knowledge acquisition forms the basis for assessing learning performance, so a knowledge test was designed based on the objectives of the training and were assessed for validity and reliability prior to final administration.

A structured knowledge test questionnaire was developed to collect data for each of the three case studies pertaining to interpersonal communication skills knowledge. The questionnaire (see Appendix - A) comprised of questions based on the objectives of the study, which included knowledge, comprehension and application dimensions of Bloom’s cognitive domain. The cognitive domain basically pertains to the knowledge and the development of intellectual skills. It includes the recall or recognition of specific facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills (Bloom, 1956). Additional inputs from the trainers responsible for the training also helped in the design of the questionnaires.

This test was undertaken to gauge the content knowledge of the trainees regarding the subject of training. The test included twenty one questions which were in the multiple choice format. The correct answers were added together to give the final performance score out of the total points. Both pre and post knowledge tests were conducted to assess the learning as a consequence of training.

An important dimension of pretest-posttest study is the effect of testing on internal validity. That is the person when exposed to the same format more than once may result in some influences from the pretest to the post test. This carry-over effect may result in increased post-test performance as the trainee may have become familiar with some aspect of the experiment (such as its subject matter, format, etc.) from the pre-test.

In order to overcome the threat from this aspect, it was decided to change the order of the questions/rearrange some responses in the knowledge test questionnaire before administering for a post test. While designing instruments to address the assessment...
needs for reporting to OSHA, Fazarro & Trybula (2012) also rearranged and slightly rewrote the pretest questions for the posttest; in order to prevent threat to internal validity.

Furthermore, no discussion regarding the knowledge test was done on day 1. This was to ensure that the influence of the pretest on the posttest scores be minimized.

After the trainees appeared for a pretest, they took the three day training for communication skills. Of this, information pertaining to the fundamentals of interpersonal communication skills (that have been considered to be the objectives on which the knowledge test was designed) was given on the first day. On the second day persuasion and negotiation concepts and skills were taught. Finally, on the last day the emphasis was concerned with exploring difficult behaviors and measures to tackle them.

On the third day, at the end of training, the knowledge test and the learning styles of the trainees were discussed.

3.9 - PILOT STUDY

A pilot study is an important part of the research process. It examines the feasibility of an approach that is intended to be used in a larger scale study. In the words of Baker (1994), it is "used to refer to pretesting or trying out, of a particular research instrument".

The aim of the pilot study was to determine whether the questions in the knowledge test were relevant to and easily understood by the respondents, in terms of the terminology and the way they were phrased; to assess the time required to complete the questionnaires as also to determine the technical functioning of the questionnaire.

Face validity of the questionnaire was conducted by a panel; to assess whether or not the questions were appropriate to evaluate the participants in the training programme. The panel comprised of a professor, two trainers and two experts of the industry who were requested to scrutinize the questionnaire and provide the necessary feedback on the content, layout, readability, clarity and ease of comprehension of measurement
items. They suggested relevant changes to elucidate ambiguous questions and statements, which were incorporated in the final format.

In the second round, the questionnaires were administered to a small number of trainees drawn from the population of interest, but who were not part of the final study. Upon completion of the questionnaires, a debriefing session was held along with the trainer to analyze the information provided to clarify directions, question wording(s), or response categories where necessary.

The time required to complete the questionnaires were also measured. The feedback provided necessary information for some changes in the wordings and certain questions were rephrased accordingly.

After the relevant changes were made and a few questions were rephrased for greater clarity, the questionnaire was administered for the final study. The final questionnaire included twenty one multiple-choice type questions.

3.10 - DATA ANALYSIS PROCEDURE

The data collected in the course of the study, through various questionnaires was keyed into SPSS (Statistical Package for Social Sciences) software, version 16.0. Some of the categorical variables were analyzed by chi-square of association. Paired samples t-test was also run to assess the changes in the learning performance based on pre-test and post-test scores. The main aspect of the study, which is the relationship between methods, style and performance were analyzed through two-way/factorial ANOVA. Since both the predictor variables are categorical, ANOVA could be used to test their effect (Frazir, Tix & Barron, 2004) on the continuous dependent variable, learning performance. Learning performance was obtained from the difference of the pre and post test scores of the trainees. Dimitrov & Rumrill (2003) suggests that ANOVA is a statistical method which is traditionally used in comparing groups with pretest and posttest data, as the use of pretest scores helps to produce more powerful tests through a reduction in error variance (Stevens, 1996).

As both the predictor/ independent variable(s) has different levels, so two-way ANOVA is the most appropriate inferential technique for analysis. Two-way ANOVA
is a type of study design with one numerical outcome variable and two categorical explanatory variables (SOCR EduMaterials AnalysisActivities ANOVA 2, 2012). Alternatively two-way ANOVA is used when there is more than one independent variable with multiple observations for each independent variable (Two-way analysis of variance, 2012). Besides determining the main effect of contributions of each independent variable, two-way ANOVA also helps identify if there is a significant interaction effect between the factors of the independent variables (Malhotra, 2007).

Moreover, two-way ANOVA is used to address research questions that focus on the difference in the means of a dependent variable when there are two or more independent variables. So in order to ascertain the relationship between training methods (three methods viz., lecture, role-play and videos cum discussion) and learning style (viz., accommodating, assimilating, diverging and converging), the most appropriate statistical test is the $3 \times 4$ factorial ANOVA, where the number 3 and 4 refer to the number of levels in the two respective independent variables.

Training methods have been considered as the 'focal independent variable' as this variable is of primary interest of the study. Simultaneously, learning styles have been considered as the moderator variable, seeing that several researches have suggested that this variable has potential impact on the focal independent variable and the ultimate learning. Besides, learning style is an intrinsic characteristic of a trainee and so is designated as the moderator variable, while the three groups of trainees in each of the three training methods, was a characteristic assigned by the researcher, and so will be considered as the focal independent variable.

As such a factorial design was adopted to analyze the relationships of interest. A factorial design permits the study of more than one independent variable, which has several levels. A “factor” is another name for an independent variable. Factorial designs are described using “A x B” notation, in which “A” stands for the number of levels of one independent variable and “B” stands for the number of levels of the second independent variable.

So, in this study, we have three different training methods and four different learning styles, consequently giving rise to a $3 \times 4$ factorial ANOVA. In addition to these analyses, SPSS generated graphical representations of the data such as tables and
other figures, which have been depicted wherever applicable. Besides, reducing the risk of committing a Type I error, factorial ANOVA enables to test both main effects as also the interaction effects, between the levels of the factors (independent variables).

3.11 - SUMMARY

This chapter provides a preliminary discussion on the need for the present study. Further, the conceptual model for the study has been proposed based on the theoretical background from the review of extant literature. The subsequent sections contain information related to the research questions, hypotheses, instruments and the pilot study. Finally, the chapter ends with a description of the data collection techniques employed in the present study.
CHAPTER - 4

INTRODUCTION TO THE CASE STUDIES

TRAINING SCENARIO IN INDIAN INDUSTRY
INTERPERSONAL COMMUNICATION SKILLS TRAINING
CASE STUDY #1
CASE STUDY #2
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SUMMARY
4.1 - TRAINING SCENARIO IN INDIAN INDUSTRY

India is predicted to be the third largest economy by 2035 after the United States and China. It is estimated that the average age in India in 2020 will be 29 years and so India has a rapidly growing young populace, which it needs to cater appropriately in order to excel in the near future. In order to meet the demands of this growing young population, India is aiming to create around 500 million skilled workers by 2022. This calls for huge investment in the field of education, training and development.

Several colleges and universities are being established to cater to the needs of the young populace and to suitably equip them for future demands of the workplace. Besides, a number of vocational and training institutes are also being set up to develop the requisite skills, which are in demand in the present dynamic work environment. Moreover, Randstad India’s latest global Workmonitor Survey 2012 (“Indian companies”, 2012) reveals that more and more companies are willing to invest on their employees with regard to training, education and career opportunities if they are in the age group of 25 to 34 years. A survey by Duke Corporate Education (DCE) (2011) revealed that the Indian corporate training market was around US $2.8 billion and that there was a high demand for sales training, followed by soft skills such as communication and managerial effectiveness.

Traditionally, training and development was a 2-3 days retreat event for employees, who would attend, enjoy and return to their jobs without much practical application of the learning they acquired at such programmes. However, there has been a paradigm shift in this landscape and today training programmes and their objectives are closely linked to an individual’s competencies, performance as well as succession planning. This was also highlighted by the Indian Prime Minister Manmohan Singh, at the Inauguration of India Corporate Week 2010, when he said that “First, increasing the employability of our population through effective skill development must be central to corporate strategy and not merely an afterthought resulting from difficulties in recruitment” (DCE, 2011).

As India emerges as a diversified and internationally competitive economy, there is a need to train and develop existing employees consistently as also new workforce for future demands. Business Line (Prayag, 2012) quotes Padmaja Alaganandan,
Executive Director, Consulting, PricewaterhouseCoopers Consulting, as saying, corporate India needs to allocate at least 5-6 per cent of payroll costs on training which is presently around 3-3.5 % of the payroll. It is expected that by 2020, India will have a surplus of 47 million people in the working age group; so there is a great need to properly develop and equip these individuals with the requisite skills that will be demanded by the future economy.

India’s education system is significantly biased towards theoretical aspects with little or no practical training. Consequently, most of the engineering and management graduates require further training before they can take their desired job (DataMonitor, 2010, as cited in DCE, 2011). Riley (2008) too states that the education system prevailing in India results in creating a large number of the potential workers who are generally not employable. She highlights a report co-written by Harvard and Duke researchers (How the Disciple Became the Guru: Is It Time for the U.S. to Learn Workforce Development From Former Disciple India?), on the study of 24 companies from the promising sectors in India, which concludes that ‘all sectors have grown quickly in spite of major roadblocks which are termed as skills shortfalls and talent shortages’.

Moreover, in a research carried out by the McKinsey Global Institute (2005), it was found that less than 10% of the management graduates and fewer than 25% of the engineering graduates are considered globally employable by HR professionals. Besides the basic knowledge of the subject, organizations also consider individuals to possess good communication skills, confidence and the ability and attitude towards learning, which are mostly lacked by these graduates. Tata Power chief, Prasad Menon highlights the lack of focus on basic primary education and also proposed that greater investment is needed in training and basic work-related education (Durie, 2010, as cited in DCE, 2011).

Keeping in view, the huge talent pool that India has, several initiatives are being taken by the government as also the private players towards the growth and development of the Indian workforce. A promising instance of collective impact is the Government of India’s (GoI) launch of the National Skills Development Corporation (NSDC) – a public-private partnership to develop skills and cater to the requirements of the manufacturing sector. It is making efforts to ensure that around 100 million new jobs
that are projected by 2025 will be filled by trained workers (Hanleybrown, & Scott, 2012). In another example, the Bharti Group's Centum Learning formed Centum WorkSkills India in 2009, which is a joint venture with National Skill Development Corporation (NSDC) to develop skills and to train 12 million people across 11 states in 383 districts by 2022. The institute offers services in 10 technical skill-sets including retail and hospitality under three domains - corporate training, skills development and undergraduate and postgraduate courses.

The NASSCOM Sector Skills Council (SSC) has signed a memorandum of understanding (MoU) with NIIT for three years, to offer enhanced training programmes to students, through its training campuses across India ("NIIT, Nasscom team", 2013). In some industries, projecting the workers shortage in the near future, the private sector has come forward to play a dominant role in developing workforce.

One of the prominent construction company, Larsen & Toubro (L&T) has significantly improved its workforce quality by providing vocational training through Construction Skills Training Institutes (CSTI). Over 5,000 youth were trained in topics critical to construction (carpentry, masonry, welding) through CSTIs in 2009-10, with future targets set at 15,000 trainees annually. With 100% placement rates, the trainees are guaranteed superior jobs, while L&T secures a high-quality and constant availability of skilled workforce (Hanleybrown, & Scott, 2012).

Besides, organizations are also establishing independent institutes to cater to future demands of skilled manpower. For instance, the Bharti Group has created its own company for training and development, 'The Bharti Resources'. While Wipro has launched 'Mission 10X', a nonprofit programme aimed at enhancing employability skills of engineering graduates. Besides it will spend 1 per cent (capital expenditure costs not included) of its revenue on training 14,000 fresh graduates a year over a period of 12-14 weeks (Jasuja, & Kashyap, 2010).

As Jagero, Komba & Mlingi (2012) state that training is necessary within the organization because it helps in maximizing performance of its employees at all levels. Accordingly, the training industry in India too has gained momentum and a new era is quietly dawning upon with the key concern to accelerate training and development in order to meet the increasingly competitive economic environment.
The demand for continuous learning and the rapidly changing business dynamics are bringing in a change that is both profound and permanent. Training in India too is evolving as an effective business tool, and organizations are increasingly linking their training objectives to the business goals. The progress in the field of training in India is apparently linked to the constantly changing state of markets as also the stiff competition in which every organization needs to optimally use its most valuable asset, the human resource in order to efficiently and effectively attain business results.

Another important reason for the renewed emphasis on employee development is that organizations have started to realise that human capital is the only unique distinguishing factor that can provide them an edge over competition. Today Indian organizations too are considering training to be a separate and distinct concept, which has become a critical business enabler for effective sales, leadership, and relationship building resulting in increased production and better service quality.

Lin (2009) asserts that leadership, sales and teamwork are at the forefront of the development of Indian industry. In addition to long-term retention, Sangani (2011) suggests that if employees perceive growth at their workplace, their engagement and motivation levels increases manifold. Thus, a steady shift from a general to a specific approach has been realised by the Indian corporate training industry, which is an essential ingredient for India’s future economic growth.

Organizations provide training to employees in virtually every field, from sales and marketing, relationship and team building, communication and interpersonal skills to logistics, production and engineering. With the increase in competition, every company wants to optimize the utilization of its resources to yield the maximum possible results. For this purpose training is now being increasingly considered as an effective business tool and is linked with the business outcome.

Reflecting in response to the rapidly changing technology at the workplace and the increasing competition, even companies like General Electric, General Motors and Xerox are venturing out to establish Corporate Universities in order to ascertain a permanent availability of efficient future employees with appropriate training. Moreover, the severe dearth of trained work force in the varied sectors of the industry as well as the aggressive competition demands suitable trainers and appropriate
training strategies to develop smarter and high performing employees to yield the best results.

For the present research, three case studies were selected at convenience, which included employees of both manufacturing as well as service industry. In the context of globalization and rapid economic development, service sector is one of the core and the most rapidly growing part of the industry, which has the potential to create a huge amount of growth for the Indian economy.

Besides being a major contributor to both employment and national income, recent years have witnessed a major boom in the service sector. And so, amongst the three case studies, two cases comprise of employees from the service segment, while one includes employees of a manufacturing domain.

4.2 - INTERPERSONAL COMMUNICATION SKILLS TRAINING

For the purpose of this study, a very common and a topic of immense importance for today’s employees’, which is interpersonal communication skills training was considered. Studies indicate that skilled interpersonal communication improves individual and group outcomes in life and work. Hubbley (1994) states that ‘interpersonal communication is a person to person, two-way, verbal and non verbal interaction that includes the sharing of information and feelings between individuals or in small groups, that establishes trusting relationships’. In addition to being associated with effective management (Bambacas & Patrickson, 2008), expertise in interpersonal communication improves individual and group outcomes in life and work (Blandhol, 2012).

Moreover, Wauters et al. (2012) are of the view that employers especially expect their sales or customer services members to partake training activities to improve their interpersonal communication skills. Furthermore, interpersonal communication skills are vital to make customers feel comfortable in making purchase decisions, as their effectiveness results in desirable social communications and interactions for connecting with the customer.
As such, all the three case studies involved training employees in effective interpersonal communication skills. The first case study involved training newly recruited medical sales representatives. The next case comprised of employees of a retail chain, while the third case study comprised of employees who were from a pharmaceutical manufacturing unit.

Time and again studies in the business sector have proposed that employers place great value on strong interpersonal communication skills as they lead to enhanced job satisfaction (Jehn, 1997; Morreale, Osborne & Pearson, 2000; Morreale & Pearson, 2008; Blandhol, 2012; Dehaghi, Akhormeh & Mehrabi, 2012) and is associated with effective management (Bambacas & Patrickson, 2008).

Moreover research indicates that good interpersonal communication skills aids in knowledge sharing (Kian and Sabbaghan, 2012) which dissolves relational conflict and improves job performance (Jehn, 1997; Dehaghi et al., 2012) besides augmenting teamwork in the workplace (Cline, 2005). From the results of his study, Riddle (2010, as cited in Luu, 2012) also proposes that time management and communication skills are amongst the most important skills required by managers.

In yet another study, Dogra (2012, as cited in Luu, 2012) suggests that the three most essential skills of a manager include interpersonal skills, communication skills and decision-making skills. In a poll of 330 employees conducted by the University of Phoenix, 96% of executives rated communication and interpersonal communication as the most valuable employee trait (Cline, 2005). While communication skills enable managers to increase employee involvement, the mutual effect of effective interpersonal and communication skills is useful for managers to develop the employees (Luu, 2012).

Consequently, from the above it may be said that communication is a social need for an individual but it is the lifeblood of an organization. So, in the contemporary business organizations, it is not sufficient to possess just technical ability but it is equally essential to possess interpersonal communication skills to communicate, motivate, organize, counsel and negotiate. This makes it important to find effective and efficient training methods to teach interpersonal communication skills (Blandhol, 2012).
Within the business realm, a commonly used technique for communication and interpersonal skill development is role-play. It is considered as a versatile training method, since it facilitates learning different employee related issues such as absenteeism, performance appraisal and several conflict situations (Bohlander et al., 2001, as cited in Luu, 2012). Besides, it has been found to be one of the most effective methods for significantly improving communication skills (Bennett & Lyons, 2011).

In addition to lectures and role-play, the use of videos in the delivery of practical applications, especially interpersonal skills is well acknowledged in the literature. Hampton (2002, as cited in Donkor, 2010) perceives video as “a successful medium because it links the audio and the visual together to provide a multisensory experience for the learner”.

Research by Berkhof, van Rijssen, Schellart, Anema, & Van der, (2011, as cited in Bennett & Lyons, 2011) suggests that in case of interpersonal communication training; role-play, informative feedback and small group discussions have a significant impact on learning. Furthermore, research demonstrates that in learning communication skills, the use of videos, role plays, discussions and activities are rated as effective teaching strategies, whereas lectures were regarded as passive, rather than active means of learning (Rces, Sheard, & McPherson, 2004, as cited in Bennett & Lyons, 2011).

In contrast, Thorman (1971) in his study found that different treatments did not differentially affect the development of interpersonal skills. The present study intends to move a step ahead in order to find the effect of different training methods (viz., lecture, role-play and videos cum discussion) as also individual difference (in terms of learning style) on learning outcome.

The overall objective of the study is to investigate whether differences exist in learning performance due to the three instructional methodologies (lecture, role-play and videos cum discussion), due to individual learning styles (according to Kolb’s Learning Style Inventory- Accommodating, Assimilating, Diverging and Converging) as well as their interaction effect. Since, a study of this nature is not practically feasible on a large sample, as such the above three distinct case studies (two from
service sector and one from manufacturing), were considered to be part of the present research endeavor.

4.3 - CASE STUDY # 1

At present organizations are placing great importance to the domain of employee training and development in order to steadily upgrade the competency and skills of their employees. It is said that the best time to provide training is fresher’s orientation or introductory training. With this in mind several companies provide some form of introductory training or orientation for most of their new employees. The present case study involves training of newly recruited medical sales representatives of a health-care manufacturer.

The Pharmaceutical industry in India is the world’s third largest in terms of volume and ranks the 14th in terms of monetary value. Growing at a rate of 12%, this recession-proof industry has a lack of passionate and well-trained sales personnel. Product promotion of health-care products is distinctly different from consumer durables and so training of medical sales personnel is of utmost importance. Medical sales representatives promote a company’s products with informational messages, usually in a one-to-one interaction with health care providers, with the objective of increasing the company’s sales (Anderson, 2003).

Sultana, Manivannan & Pillai (2010) concur that unlike FMCG, pharmaceuticals has to be prescribed by doctors and so the final purchase by customers, here the patient depends on the prescription of the physician. With the medical representatives being more than mere sales force, but rather a channel for conveying information to the medical fraternity, their training strategy tends to be quite distinct.

At a time when pharmaceutical companies in India are expanding, the industry is faced with a dearth of talented workforce. As Divakar Kaza, president, Human Resources, Lupin pharmaceuticals says, “India does not have a shortage of people. But there is an acute shortage of good, employable and industry-ready people”. To overcome this hurdle in the growth of the industry, organizations are investing enormously to train students in specific skill-sets while they are still in college. Moreover, companies like Lupin are spending around Rs 25,000 on every employee.
while Hexaware Technologies are expending nearly Rs 30,000 per head every year (Singh, 2013).

In a report by Hay Group (2005), they found that providing effective training and development to medical representatives is a great challenge for the pharmaceutical organizations. In addition, according to the International Federation of Pharmaceutical Manufacturers’ Association code of pharmaceutical marketing practice states that the detailers (medical representatives) must be adequately trained with sufficient medical and technical knowledge of their company’s products in an accurate and responsible manner (Thosar, 2012).

This is also suggestive of the fact that great concern should be taken by the pharmaceutical organizations to train representatives, as continuous learning is essential for the success of sales representatives in the 21st century (Anderson, 1996). The ‘father of sales training’ and founder of the National Cash Register Company, John H. Patterson, also promotes this belief that ‘sales people should never stop learning’.

The promotion of pharmaceutical products may adopt any of these four techniques viz, personal selling, advertising, sales promotion and publicity. Howsoever, relationship or personal selling by sales representatives tends to be the most effective and primarily used techniques of promoting pharmaceutical products (Idris, Mustafa & Yousif, 2012). Due to this fact, companies spend large figures in training their sales personnel in the art of selling, since in most companies the sales personnel are the single most important link with the customer (Jobber, Lancaster & Jamieson, 2011).

Moreover, since medical sales personnel form the backbone of the entire pharmaceutical marketing effort and influences the making or breaking of the pharmaceutical sales business, besides their success in building brand image for future sales (Sultana et al., 2010). Furthermore, Ruzicic & Danner (2007) reported in their study that the healthcare environment for the pharmaceutical industry is undergoing major changes where in the ‘sales force effectiveness’ is replacing the traditional ‘size sells paradigm’. Consequently, in the contemporary era of information technology, the pharmaceutical companies are left with no silver bullet but to prepare for the future by training their sales personnel in order to create a competitive edge.
Most pharmaceutical companies provide an on-the-job training as well as classroom training to new sales reps. Their training generally entails instruction that involves a thorough knowledge of the product, the customers and competitive products already available in the market. Additionally, in order to better equip the pharmaceutical sales personnel to perform effectively in the field, the basics of marketing as also interpersonal communication and selling skills.

Besides their belief and flexibility, Shaw (2007, as cited in Sultana et al., 2010) suggests that the success of pharmaceutical sales representatives is dependent upon their interpersonal skills. Likewise, training in areas related to technical aspects of the product, effective marketing and personal selling strategies, and consumer relations will help salespeople to better manage the problems typically encountered in physician-sales representative relations (Tengilimoğlu, Korkmaz, Akinci, & Parsons, 2005).

Moreover the skill of convincing the doctor by the medical representative plays a dominant role in the doctor’s decision regarding the prescription of the same and ensuring continual sales. Previous researchers have placed great emphasis on skill levels in relation to a salesman’s performance (Rentz, Shepherd, Tashchian, Dabholkar, & Ladd, 2002). In the same study by Rentz et al. (2002), they have categorised selling skills into three dimensions namely interpersonal, salesmanship and technical skills, which are considered to be useful predictors of salesperson performance.

So, the training of the pharmaceutical representatives is essential to sharpen sales and interpersonal communication skills for creating a strong market presence. From a motivational perspective as well, training is essential to offer sales representatives a larger comfort zone and a feeling of control, besides instilling a positive attitude to perform at a high level.

For the purpose of this study, training methods have been compared based on training provided in interpersonal communication skills. Interpersonal skills refer to mental and communication algorithms applied during social communication and interaction to achieve certain effects and results (Ahmad, Basir & Kitchen, 2010). In order to
achieve higher sales performance; listening, negotiation, empathy and observation are critical.

Additionally, studies also indicate that effective listening skills are a valuable skill for successful salespersons (Comer & Drollinger, 1999; Ramsey & Sohi, 1997; Shepherd, Castleberry, & Ridnour, 1997, as cited in Ahmad, Basir & Kitchen, 2010). Also, studies by Deeter-Schmelz & Sojka (2003) and Rich & Smith (2000) suggest that empathy and perception of others emotions contribute to salesperson performance.

Training of pharmaceutical sales representatives is an intensive process and one that continues throughout their career. Strong sales training can boost an organization’s bottom line so, it is important to improve the knowledge of the sales personnel regarding company and product selling skills as also the ethical behaviour required for effective performance in the field. In recent years, pharmaceutical selling has gained immense momentum through personalized communication (Mukhopadhyay, 2007), thereby placing even greater value to interpersonal communication skills.

‘Recognizing the importance of interpersonal skills, sales organizations should give emphasis and effort to develop improved methods of training and development to enhance their salespersons’ interpersonal skills. Training and development initiatives have been proven by many previous empirical studies to lead to improved interpersonal skills of salespersons (Hunt and Baruch, 2003)’ (Ahmad, Basir & Kitchen, 2010). This necessitates an understanding that different training methods have and to appropriately investment in them. Although there are numerous methods but one should select the methodology that can convey the desired training contents to the trainees most effectively.

Trehan & Trehan (2010) assert that generally the widely used training methods for sales training include lecture, role-play and group discussion. In a report on the ‘state of sales training’ by ASTD (2008) nine training delivery methods were examined to determine the most popular approaches used in delivering training content in selling skills, product training, and sales management. In each case, it was clear that traditional methods continue to trump technology-based methods, with instructor-led classroom training being the most popular.
Futrell (2001) also proposes that classroom lectures, discussions, exercises and role-plays are some of the main training methods for sales people. While Jakoveic (2009) supports mobile learning for medical representatives as it provides remote access to training, collaboration and meetings without travel; it reduces costs, and often improves results. However, the report by ASTD (2008) reveals that online or web-based methods, such as podcasts, wikis, and other technology-based approaches, are seldom used as a route to learning selling skills than more traditional methods.

Above and beyond the instructional methodology employed to impart training, research indicates that individuals differ in their approach to learning and so an understanding of learning styles will also improve the performance of sales personnel. Some researchers like Hauer, Straub, & Wolf (2005), Kolb (1976) and Kolb & Fry (1975, as cited in Richmond, & Cummings, 2005) claim that accommodators (based on Kolb’s LSI) are generally found in “action-oriented” jobs such as marketing or sales and tend to study business administration, marketing and sales fields while attending universities.

This assertion is grounded on the preference of the accommodators to work with others and enjoy finding out new experiences (Kolb, 1984, 1993; Kolb & Kolb, 2005b). Moreover, accommodators are risk-takers (Chen, Toh & Ismail, 2005; Kolb, 1984; Kolb & Kolb, 2005a, b; McLeod, 2010) and possess an innate ability to adapt themselves to varying situations (Kolb, 1984; Kolb et al., 1995; Litzinger & Osif, 1992; Richmond & Cummings, 2005).

This case study involves the comparison of three instructional methodologies, viz., lecture, role-play and videos along with discussion to impart interpersonal communication skills training to newly recruit sales personnel of a pharmaceutical organization. The learning styles of the trainees were also considered in order to investigate interaction effects with instructional methods. The results and implications have been discussed at considerable length in the following two chapters.

4.4 - CASE STUDY # 2

The service sector in India is experiencing an unprecedented growth propelling the overall economy towards a double-digit growth. Covering activities such as trading,
banking and finance, entertainment, retail, real estate, transportation, management and consultancy; the service industry in India accounts for more than half of the countries’ GDP. A new avatar of India’s service sector is the retail industry which is currently valued around US $440 billion (Ernst & Young, 2012).

In a survey by Global Retail Development Index 2012, India was found to be fifth among the top 30 emerging markets for retail (A.T. Kearney, 2012). Triggered by a rise in income levels of the middle class, the Indian retail market is poised to grow to about US $825.46 billion by 2015 (BMI India Retail Report, 2011). Contributing about 14% to the GDP, and growing with a compound annual growth rate (CAGR) of 15-20%, this sector is surely a sunrise sector of the service industry (PricewaterhouseCoopers, 2011).

The retail sector is the second-largest employer after agriculture (Bhattacharyya, 2012; Ernst & Young, 2012) with approximately 8 percent of India’s population being employed by it (A.T. Kearney, 2012). Moreover, the enhanced FDI in retail has also boosted the requirement of trained personnel (PricewaterhouseCoopers, 2011; Bhattacharyya, 2012).

According to a recent report by Indian Staffing Federation ("FDI to boost employment", 2012) within the next 10 years the retail sector is expected to add almost 10 million new jobs, making it the largest sector in organized employment. However, being a relatively novel sector in a nascent stage, the retail industry is witnessing a shortage of talented professionals (PricewaterhouseCoopers, 2011; A.T. Kearney, 2012; Bhattacharyya, 2012), as retail is not yet a preferred career option of the young people.

In order to address this issue, large retail players are either establishing their own retail academies or are partnering with business schools to develop retail accreditation programmes to develop retail talent (PricewaterhouseCoopers, 2011; A.T. Kearney, 2012). For instance, Coca-Cola has partnered with the Indian School of Business to launch a retail academy (A.T. Kearney, 2012).

Furthermore, critical concern needs to be paid in the training and development of personnel to tackle the areas of merchandising and inventory management, supply
chain management and especially, customer relationship and store management (as the major proportion of the employment in the retail sector accounts for the front-end or retail assistant profiles in stores). And so, in the emerging retail landscape, for enhanced performance new entrants need to remain open to learning.

Studies depict that it is the service that brings the customer(s) and employee(s) in an interactive exchange process that affects the perception of customers' towards service excellence (Daly, Grove, Dorsch & Fisk, 2009). Since retail is the vital link in any typical supply chain as it is closest to the customers (National Skill Development Corporation, 2011), so employees are the face of the organization and consequently effective customer service is critical to shaping the perception of the customer leading to the eventual success of the organization.

The interaction between customers and employees represents an important dimension of retail performance (Babin, Babin & Boles, 1999; Darian, Tucci & Wiman, 2001) and so social skills are seen as important when dealing with customers (Darian et al., 2001; Nickson, Warhurst & Dutton, 2005). Moreover, in a recent research by Skillsmart Retail (Seaman, 2011), it rates customer service as the most crucial domain for creating value for an organization and an important differentiator across retail industry. DfES, (2002) too contends that the core competency for the retail industry revolves around selling and managing the customer relationship, as a result customer service is seen as an essential skill.

In addition, most of retailers consider poor customer service as the major reason for unsatisfied customer. According to a global study by Echo (2012) nearly 60% of consumers at American express intended to make a purchase but decided otherwise due to poor customer service. Also, service quality within retail units has been found to be pivotal for satisfying customers, retaining them and creating loyalty amongst customers (Naik, Gantasala & Prabhakar, 2010).

However, in a report by Tecknopak (2010), it was found that the Indian retail sector faces the major skills gap in the domain of sales and customer management, store maintenance and visual merchandising. Foreseeing the imperative role of employees in customer relationship, appropriate training in customer service skills is critical to
the organizational success and a key way to stand out in an increasingly competitive market.

An interesting perspective of the importance of customer service can be observed from reflections of Sam Walton; the pioneer of Wal Mart. According to him, the basic tenet of customer service is providing customers with superior service and ensuring that they are completely satisfied with the service. For this reason, employees are provided training in customer care usually through seminars, videotapes and audio taped role-play. Besides, at Wal Mart employees share their experiences with customers, analyze and participate in question and answer sessions in order to enhance the quality of customer care in their stores.

In a study by Naik, Gantasala & Prabhakar (2010) concerned with the service at retail units in India (Hyderabad, Andhra Pradesh), it was found that the services offered by the retail units have positive impact and are significant in building customer satisfaction. Subsequently, in the evolving retail ecosystem employees are increasingly being trained to focus on customer satisfaction with the purpose of providing better customer service (PricewaterhouseCoopers, 2011).

And since customer service training refers to teaching employees the knowledge, skills, and competencies required to increase customer satisfaction. So, realizing the essential role of satisfied customers and hence better customer service, retailers are resorting in a big way to train their personnel, both new and existing in essential customer service skills.

‘In retail selling, exchange typically is initiated, maintained, and terminated on a person-to-person basis’ (Williams & Spiro, 1985). Research indicates that superior service quality, particularly the dimension of personal interaction, facilitates in building long lasting relationships resulting in customer satisfaction and customer loyalty leading to organizational success (Beneke, Hayworth, Hobson, & Mia, 2012; Singh, 2012; Yuen, & Chan, 2010).

In retail, the basic activity during customer service is communication and since successful selling depends on successful interpersonal communication (Williams & Spiro, 1985); so, the focus of retail training is mainly on shop floor interactions as this
builds the foundation for future sales and hence success in the long run. As such the heart of retail training is centred on developing courtesy, general communication and customer service etiquettes, since store staff is the only human customer interface for a retailer and they play a very important role in delivering customer service (Naik, Gantasala & Prabhakar, 2010; Trends by Technopak, 2012).

Besides videos and online tools, several approaches such as shop floor observations and feedback; in-store coaches as well as off the job training approaches are being adopted to develop skilled workforce. In a comparison of two different instructional formats, lecture and role-play, Adams, Tallon, & Rimell (1980) found that the performance of staff who role-played continued to improve while those in the lecture group was stable or declined after an initial improvement.

A study by Seay (1994) on customer service training revealed that besides lectures, role-play and case studies, the most common training methods adopted by human resource development professionals in case of customer service training included videos presentations and simulations. Zemke (1989, as cited in Seay, 1994) also found that videos are effective in developing interpersonal skills.

4.5 - Case Study # 3

The last case considered for the study is related to employees of one of the largest, most stable and fastest growing businesses in the world, the pharmaceutical industry. Due to factors, such as low cost of production and favourable demographic conditions the Indian pharmaceutical industry is too developing at a tremendous pace in order to meet both national and international demands. It ranks among the top five producers of bulk drugs in the world. In a study by Corporate Catalyst India (CCI) on the ‘Pharmaceutical Industry in India’ (2012), it reports that the Indian pharmaceutical industry is presently growing at around 12 percent annually and is estimated to be worth around US$12 billion.

According to Dr A J V Prasad, Joint Secretary, Department of Pharmaceuticals, the Indian pharmaceutical sector is expected to grow five-fold to reach US$ 91.45 billion by 2020. While globally, India ranks third in terms of manufacturing pharmaceutical products by volume (CCI, 2012), however, it is extremely fragmented with severe
price competition and government price controls. The Indian pharmaceutical industry meets around 70% of the domestic demand from its nearly 250 large units and 8000 small-scale units.

A report by PwC (2010), indicates that India is expected to join the league of top 10 global pharmaceutical markets by 2020, with total sales reaching US$ 50 billion. Likewise, Bhadoria, Bhajanka, Chakraborty & Mitra (2010) and Ernst & Young (2012) suggest that if aggressive growth strategies are implemented, the market has the potential to touch US$ 70 billion by 2020.

Being a virtually recession proof industry, the pharmaceutical sector in India accounts for nearly 8% of global pharmaceutical production (National Skill Development Corporation, 2012). According to the 12th Five Year Plan (2012-17) it is expected that the Indian pharmaceutical industry will employ 15 lakh people by 2015 and 24.64 lakh people by 2022 (Press Trust of India, 2012). In order to fuel this growth, organizations need to invest in developing a pool of adequately skilled, competent and motivated workforce for virtually every domain of this industry; be it manufacturing, sales and marketing, quality control, intellectual property or even research and development.

The trends of growth or decline in an industry are a useful indicator of the changes in the industry and provide information of the necessary training interventions that may be required to sustain the change. And since the pharmaceutical industry in India is witnessing a robust growth, so organizations need to invest in training new workers with industry specific skills, new technologies etc. in order to attract and retain high performing workforce.

Gallup, Domenick, & Gillis (2010) states that, ‘competency and efficiency of pharmaceutical manufacturing personnel is critical to a safe and successful manufacturing process’. Therefore great concern is required pertaining to the training and development of manufacturing personnel for increasing the scales of production and to compete for the forecasted demands. Moreover, a well designed training programme plays a crucial role in increasing productivity and reducing turnover (Gallup, Beauchemin, & Gillis, 1999, Pennathur et al., 1999).
The success of a manufacturing organization is not just limited to machinery, gears, and human hands working to create various items. It involves effective interpersonal communication skills essential to manage relationships and facilitate effective performance in the workplace to ensure smooth production and a positive work environment. According to a survey report by United States Department Labour survey (1999, as cited in Pennathur et al., 1999), one of the essential competencies that future workers in manufacturing would need is interpersonal skills for team problem-solving.

Interpersonal communication basically refers to the exchange of information, feelings, and meaning through verbal as well as non-verbal messages. It encompasses the most subtle or unintentional non-verbal communication to active verbal communication. As such, it includes the tone of voice, facial expressions, gestures and body language besides face-to-face communication.

So, fundamentally interpersonal communication has an impact on people and the people with whom they interact. In a nutshell, it can be said that interpersonal communication skill is prerequisite for every type of workplace setting as it provides one with the ability to effectively communicate in a group (Crowell, 2011).

With this view, the main objective of this case study was to assess the effectiveness of the three different training methods (lecture, role-plays and videos cum discussion) with regards to individual learning styles (according to Kolb’s LSI) on learning performance of line managers of a pharmaceutical organization.

As in any form of manufacturing enterprise, the first line manager’s role is critical to a pharmaceutical company as well. With external pressures such as globalization, increasing competition, dynamic work environment, budget cuts and a shortage of talent, the role of the first line manager is arguably the most important in order to facilitate the right balance between delegation and control (Intrepid Learning Solutions, 2008).

The first line managers include employees of the management level who are directly above non-managerial workers. They are generally entrusted to supervise production on line tasks in the manufacturing business, and typically consist of
positions such as foreman, section head and shift boss. They play a key role in planning, organizing, leading and coordinating the resources to get the work done (James-Sommer, 2008; Luu, 2012) and so are “critical agents in the people and performance causal chain” (Chartered Institute of Personnel and Development, 2007).

First line managers can significantly influence and contribute to higher levels of individual, team and organizational performance. They also supply information about employees’ satisfaction to the higher management for consideration in their organizational planning process. In a nutshell, competent first-line managers are the lynchpin to successful organizational performance provided that they are offered with appropriate knowledge, skill sets and tools to execute their work.

Smith (2010, as cited in Looper, 2010) says that as workers become more specialized, their reliance on teammates to accomplish tasks outside of their skill set increases. Naturally, communication between employees is critical to the success of both the employee as well as the overall organizational performance.

So besides providing safety, teambuilding and on-the job training, training in communication and interpersonal skills is equally essential in any manufacturing entity, to nurture sound work environment for augmented performance, thereby providing a competitive edge to an organization.

In a study by Meister & Reinsch (1978), it revealed that formal training programs were not frequently employed by manufacturing organizations; but when such training was provided it frequently included communication concepts and skills. Since, studies have shown that communication difficulties can contribute to problems of motivation, attitude, leadership, coordination and control. Consequently, training in communication skills is a significant concern for any manufacturing organization.

Despite the fact that work settings have changed dramatically in the recent past, the ability to effectively communicate and get along with others (interpersonal skills) still remains crucial in today’s business environment. According to a survey by the National Association of Colleges and Employers (NACE Research, 2005) effective communication and interpersonal skills ranks amongst the top three most desired traits for new hires.
Communication is an essential element in contemporary business organizations and it has been found that a first-line manager may spend as much as sixty percent of his or her time in communication (Meister & Reinsche, 1978).

In a recent study by Melcrum (2003, as cited in James-Sommer, 2008) on ‘Front-line manager communication’, it was found that effective interpersonal communication skills is a prerequisite for line managers to ensure a proper working environment, by creating a friendly and enjoyable work place, allowing ideas to be understood easily and minimizing any kind of work place conflict. Since the most essential role of first-line manager is to communicate information between the employees and higher management.

So, they need training and support to understand how to communicate effectively, how to listen for meaning beyond the words, and how to understand the power of the spoken and unspoken messages they send (James-Sommer, 2008). Additionally, since their focus is enabling others to work, so they need to understand the type of information that is required by their employees, the most suitable time, form and medium or channel to deliver that information.

There are several approaches that may be adopted to impart training to managers in communication and interpersonal skills. However, the methods for training first-line managers must be carefully chosen considering the varied personal backgrounds of each individual trainee, as everyone is likely to possess different level of knowledge, skills and ability to comprehend the content of the training (Luu, 2012).

4.6 - SUMMARY

This chapter has briefly described the emerging sectors in India and the requirements of these industries in the near future. As growth and expansion demands superior and well-trained professionals, so the need of the hour is providing adequate training to both existing as well as new hires. This will enable the growth of organizations and boost their performance thereby providing them the competence to excel in today's competitive workplace. This chapter has accordingly presented an outline of the three case studies as also the importance of interpersonal communication skills.
CHAPTER 5

ANALYSIS AND FINDINGS

INTRODUCTION

RELIABILITY AND VALIDITY OF THE INSTRUMENTS

FINDINGS OF CASE STUDY #1

FINDINGS OF CASE STUDY #2

FINDINGS OF CASE STUDY #3

SUMMARY
5.1- INTRODUCTION

Amid the abounding modes of instruction, trainers still struggle to meet the needs of individual trainees and effectively prepare them for organizations. The purpose of this study was to use a descriptive pre test-post test evaluation case-study design to investigate which methods [lecture(least engaging), videos with discussion (moderately engaging) and role-plays (Most engaging)] are effective for providing skills for training employees in the acquisition of interpersonal communication skills.

Besides, the study also considered the learning styles of individual trainees and their preferences for particular methods in training. The information from this study will help organizations create and implement training programmes that will effectively prepare employees to deal with the complexities of individual behaviour, thereby reducing negative outcomes.

The findings reported in this chapter are based on data analyses related to the following research questions that were designed to guide and frame the research process in this study:

1. Is there an improvement in the learning performance of trainees after the training intervention?
2. Is there a difference in the learning performance of trainees based upon different training methodologies?
3. Is there a difference in the learning performance of trainees based upon their learning style?
4. Is there an interaction between instructional method and learning style based upon the performance scores?
5. What, if any, relationship exists between adult learners having a particular style of learning and preferred mode of instruction?

To answer these five research questions, a three-part survey questionnaire was designed. The three parts of the survey were: (a) Part I: To assess the learning styles of trainees, according to Kolb’s Learning Style Inventory; (b) Part II: Interpersonal communication knowledge test questionnaire for pre and post test (a questionnaire was designed to assess the level of learning); (c) Part III: The demographics of the
employees who were part of the study and their preferred mode of instruction for the particular training. Overall, the survey includes 36 questions, twelve in Part I, twenty one in Part II, and three in Part III.

As the ability of any research work to answer its research question(s) is highly dependent on the quality of the measuring instrument(s) and the data collection procedure. So, before answering the four research questions; two of the most important and essential characteristics of a measurement procedure, that is, reliability and validity were assessed. Cronbach (1971) and Nunnally (1978) state that in order to draw valid inferences from a research, measures of all the variables are supposed to have reliability and validity.

5.2 - RELIABILITY AND VALIDITY OF THE INSTRUMENTS

Reliability refers to the extent to which a questionnaire, test, an observation or any measurement procedure generates the same results on repeated trials. It is the degree to which an individual's responses (i.e., their scores) on a survey over a period of time remains the same. In short, it is the stability or consistency of scores over time or across raters.

An important aspect of reliability is internal consistency (or homogeneity). It refers to the extent to which items of an instrument are measuring the same thing. A statistic for investigating the internal consistency of a questionnaire is Cronbach's alpha (Cronbach, 1951). It is a test to assess the reliability of measurement items that requires only a single test administration to provide a unique estimate of the reliability for a given test (Gliem & Gliem, 2003).

Gliem & Gliem (2003) are of the view that an alpha of 0.8 is a reasonable goal for the reliability of a measurement item, with Cronbach's alpha reliability ranging between 0 and 1. They also suggest that the closer the alpha coefficient is to 1.0, the greater the internal consistency of the items. While research indicates that there is no consistent opinion on the value of coefficient alpha for scale reliability, however a value of 0.70 or higher is widely acceptable in social sciences (Nunnaly, 1978, as cited in Osborne, 2003).
On the other hand, validity pertains to the degree to which an instrument assesses or measures the construct of interest. In other words, validity of an instrument refers to how well it measures what it is supposed to measure (Validity, 2013). In the present study, the content validity of the knowledge test instrument was assessed by a panel of experts and trainees (who were not part of the actual study groups).

*The reliability of Kolb’s Learning Style Inventory and knowledge test questionnaire*

An important aspect that needs to be addressed is the reliability of the Kolb Learning Style Inventory (LSI). Willcoxson & Prosser (1996, as cited in as Healey & Jenkins, 2000) found that Kolb’s Learning Style Inventory (LSI-2, 1985) is highly reliable and valid instrument to assess learning style of an individual.

**TABLE - 1: CRONBACH'S ALPHAS FOR THE MEASUREMENT ITEMS OF KOLB LSI AND KNOWLEDGE TEST (CASE STUDY I)**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active experimentation</td>
<td>0.79</td>
</tr>
<tr>
<td>Reflective observation</td>
<td>0.73</td>
</tr>
<tr>
<td>Concrete experience</td>
<td>0.81</td>
</tr>
<tr>
<td>Abstract conceptualization</td>
<td>0.85</td>
</tr>
<tr>
<td>Knowledge test</td>
<td>0.79</td>
</tr>
</tbody>
</table>

**TABLE - 2: CRONBACH'S ALPHAS FOR THE MEASUREMENT ITEMS OF KOLB LSI AND KNOWLEDGE TEST (CASE STUDY II)**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active experimentation</td>
<td>0.76</td>
</tr>
<tr>
<td>Reflective observation</td>
<td>0.78</td>
</tr>
<tr>
<td>Concrete experience</td>
<td>0.84</td>
</tr>
<tr>
<td>Abstract conceptualization</td>
<td>0.80</td>
</tr>
<tr>
<td>Knowledge test</td>
<td>0.81</td>
</tr>
</tbody>
</table>

In the present study, the coefficient alpha for the three case studies indicates a strong internal consistency of the Kolb LSI and the knowledge test questionnaires. The table
number 1, 2 and 3 present the Cronbach’s alphas for Kolb’s LSI and knowledge test questionnaire for the three cases.

**TABLE - 3: CRONBACH’S ALPHAS FOR THE MEASUREMENT ITEMS OF KOLB LSI AND KNOWLEDGE TEST (CASE STUDY III)**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active experimentation</td>
<td>0.79</td>
</tr>
<tr>
<td>Reflective observation</td>
<td>0.71</td>
</tr>
<tr>
<td>Concrete experience</td>
<td>0.83</td>
</tr>
<tr>
<td>Abstract conceptualization</td>
<td>0.81</td>
</tr>
<tr>
<td>Knowledge test</td>
<td>0.75</td>
</tr>
</tbody>
</table>

The values of Cronbach’s alpha for the four dimensions of Kolb’s LSI are much higher than 0.7, indicating a strong internal consistency of the inventory. The findings of this study are consistent with Whyte, Karolick, & Taylor (1996) study with the same survey instrument (Kolb’s LSI). They had obtained values ranging from 0.82 for concrete experience, to 0.83 for abstract conceptualization, to 0.78 for active experimentation and 0.73 for reflective observation (Whyte, Karolick, & Taylor, 1996).

5.3 - FINDINGS OF CASE STUDY # 1

The first case study was related to the training of newly recruited medical representative (MR) of a pharmaceutical company. A total of 66 employees were trained in interpersonal communication skills, an important dimension of sales skills that need to be possessed by an MR for advertising and sale of pharmaceutical products. Three training methods were considered, and the employees were randomly selected from each of the three groups.

Twenty three employees were selected from the lecture group, twenty two from videos cum discussion sessions and twenty one from role-play training group. One
trainer undertook the training for the lecture and videos with discussion groups, while a different trainer guided the role-play sessions.

A comprehensive 21-item questionnaire was designed to assess the level of knowledge of the trainees regarding concepts in verbal, non-verbal, listening and other aspects of interpersonal communication that are relevant for medical representatives in the pharmaceutical industry.

Subjects completed the test both before the commencement of training and after the completion of the training programme. In order to examine the effectiveness of the three instructional methodologies, an analysis of trainees’ learning performance was carried out (the difference between post and pre test scores).

Figure 5.1 shows the distribution of trainees’ pre-test and post-test score, their overall mean and standard deviation. A total of sixty six (N_{total} = 66) trainees’ undertook the training in medical representative skills. The gender break down indicated that 86.4% of the trainees were male while 57.7% were female. By age, 84.8% of the trainees were under 30; 15.2% were between 30- 45 while none were over 45.

**FIGURE: 5.1- FREQUENCY DISTRIBUTION OF THE PRE-TEST AND POST-TEST SCORES**
In order to test the first research question, a paired samples t-test was conducted to evaluate the impact of the intervention on trainees' performance scores. The Table - 4 provides the descriptive statistics for both the pre-test as well as post-test scores. The overall mean pre-test score was 15.56, while the mean post-test score was 17.58, indicating an overall improvement in the learning of the trainees because of the training undertaken.

**TABLE- 4: PAIRED SAMPLES STATISTICS**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th></th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>Pre-test</td>
<td>15.56</td>
<td>66</td>
<td>1.266</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>17.58</td>
<td>66</td>
<td>1.278</td>
</tr>
</tbody>
</table>

**TABLE - 5: PAIRED SAMPLES CORRELATIONS**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Correlation</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>Pre-test &amp; post-test</td>
<td>66</td>
<td>.568</td>
</tr>
</tbody>
</table>

Furthermore, from Table - 5, we find that there is a strong positive correlation (0.568) and so trainees who performed well in the pre-test did well in the post-test.

**TABLE - 6: PAIRED SAMPLES TEST**

<table>
<thead>
<tr>
<th></th>
<th>Paired Differences</th>
<th>95% Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Pair 1</td>
<td>Pre-test</td>
<td>-</td>
</tr>
<tr>
<td>1 post-test</td>
<td>2.015</td>
<td>.183</td>
</tr>
</tbody>
</table>
The result of the paired t-test (Table - 6) shows that there was a statistically significant increase in the overall performance scores of trainees from pre-test (M = 15.56, SD = 1.266) to post-test (M = 17.58, SD = 1.278), t (65) = -13.837, p < .05 (two-tailed).

**TABLE - 7: DESCRIPTIVE STATISTICS OF THE CASE STUDY #1**

Dependent Variable: Learning performance

<table>
<thead>
<tr>
<th>Method</th>
<th>Style</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Accommodating</td>
<td>2.00</td>
<td>1.155</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Diverging</td>
<td>1.00</td>
<td>1.000</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Assimilating</td>
<td>3.00</td>
<td>.756</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Converging</td>
<td>1.50</td>
<td>.707</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.17</td>
<td>1.154</td>
<td>23</td>
</tr>
<tr>
<td>Videos with discussion</td>
<td>Accommodating</td>
<td>2.22</td>
<td>1.093</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Diverging</td>
<td>1.67</td>
<td>.516</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Assimilating</td>
<td>1.50</td>
<td>.577</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Converging</td>
<td>1.00</td>
<td>1.732</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.77</td>
<td>1.020</td>
<td>22</td>
</tr>
<tr>
<td>Role-play</td>
<td>Accommodating</td>
<td>2.91</td>
<td>1.136</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Diverging</td>
<td>1.75</td>
<td>1.258</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Assimilating</td>
<td>1.00</td>
<td>1.258</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Converging</td>
<td>.80</td>
<td>.837</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.10</td>
<td>1.375</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>Accommodating</td>
<td>2.40</td>
<td>1.163</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Diverging</td>
<td>1.54</td>
<td>.877</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Assimilating</td>
<td>2.38</td>
<td>1.044</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Converging</td>
<td>1.00</td>
<td>1.054</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.02</td>
<td>1.183</td>
<td>66</td>
</tr>
</tbody>
</table>
The mean increase in overall performance scores of trainees was 2.015 with a 95% confidence interval ranging from -2.306 to -1.724. Consequently, we reject the null hypothesis, H10, and we have sufficient evidence to conclude that there was an improvement in the performance of trainees after the training intervention.

A 3 × 4 ANOVA was used to examine the learning performance of trainees in three separate groups (trained by way of three different methods) with different learning styles as also answer the research questions 2 to 4. The means, standard deviations and group sizes (N) for all sub-groups, independent variable groups and the total sample is reported in Table 7.

The first row (the lecture group), presents the descriptive information for each sub-group that were part of the lecture session. The sub-group includes the four styles of learning – accommodators, divergers, assimilators and convergers (according to Kolb’s learning style inventory). The mean learning was highest for the assimilating, \(M_{ass} = 3.00\), \(N_{ass} = 8\), while it was lowest for divergers, \(M_{div} = 1.00\), \(N_{div} = 3\). The last line, labelled Total in this row provides the descriptive information for everyone in group 1 of the focal independent variable, which is the lecture group.

Similarly, the second row, labelled videos cum discussion (VD) presents the descriptive information for the four learning style sub-groups who were part of the VD session. In the VD group, the mean learning was highest for accomodating, \(M_{acc} = 2.22\), \(N_{acc} = 9\) and lowest for converging, \(M_{conv} = 1.00\), \(N_{conv} = 3\). The information for the group 2 of the main independent variable (videos cum discussion group of trainees) is given in the last line, Total of this row.

The third row in this block (Table-7), presents the descriptive information of all the trainees in the third group of the focal independent variable, the role-play session. In this session the accommodating showed the greatest mean learning, \(M_{acoo} = 2.91\), \(N_{acoo} = 11\), and the convergers (\(M_{conv} = 1.00\), \(N_{conv} = 5\)) the lowest. The last line identified with the label, Total, presents the descriptive information for everyone in group 3 (role-play session) of the focal independent variable.

The fourth and the final row of Table -7 presents the descriptive information for each group of the moderator independent variable (learning styles), which is identified by
their respective value labels. Lastly, at the very bottom of the fourth row, also labelled as Total, the descriptive information for the total sample is presented.

Across all training methods, mean learning was highest for the accommodating ($M_{acc}$ = 2.40), and they had the highest representation ($N_{acc} = 30$) amongst the total. On the other hand, the lowest overall mean learning was for the convergences, $M_{conv} = 1.00$. The overall group learning ($N_{total} = 66$) of the three training groups had a mean learning of 2.02 with a standard deviation of 1.183.

5.3.1- Results of 3 × 4 ANOVA

In order to gauge the relationship between the two independent variables (training methods and learning style) and the dependent variable (learning performance), two-way or factorial ANOVA was carried out. Factorial ANOVA is used to address research questions that focus on the difference in the means of one dependent variable when there are two or more independent variables.

In the present study, the focal independent variable is training methods, which has three levels (lecture, role-play and videos with discussion) while the moderator variable is learning style, which has four levels (accommodating, diverging, assimilating and converging). Therefore, the most appropriate statistical test is a 3×4 factorial ANOVA, where the number 3 and 4 refers to the number of levels in the two respective independent variables.

**TABLE - 8: LEVENE'S TEST OF EQUALITY OF ERROR VARIANCES**

<table>
<thead>
<tr>
<th></th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>.916</td>
<td>11</td>
<td>54</td>
</tr>
</tbody>
</table>

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Method + Style + Method * Style

An important assumption of ANOVA is homogeneity of variance, that is, the population variances in all cells of the factorial design are equal. Table - 8 shows the
result of Levene's test for homogeneity of group variance. It is found to be statistically insignificant at $\alpha = 0.05$, $F(11, 54) = 0.916$, $p = 0.532$, indicating that this assumption underlying the application of the two-way ANOVA has been met. Therefore, there is sufficient evidence to say that there exists no difference in variances between the group means.

The first test is an overall test to assess whether there is a difference among the 12 cell means ($3 \times 4$). Table-9 provides a summary of the factorial ANOVA. The results indicates a statistically significant F statistic, $F= 2.948$, $p < 0.05$. Since the overall test is significant, the focus turns to the factors that may be driving the significance (that is, training methods, learning style or the interaction between the two).

### TABLE - 9: TWO-WAY ANALYSIS OF VARIANCE

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>34.137$^a$</td>
<td>11</td>
<td>3.103</td>
<td>2.948</td>
<td>.004</td>
</tr>
<tr>
<td>Intercept</td>
<td>119.653</td>
<td>1</td>
<td>119.653</td>
<td>113.658</td>
<td>.000</td>
</tr>
<tr>
<td>Method</td>
<td>.734</td>
<td>2</td>
<td>.367</td>
<td>.349</td>
<td>.707</td>
</tr>
<tr>
<td>Style</td>
<td>14.533</td>
<td>3</td>
<td>4.844</td>
<td>4.602</td>
<td>.006</td>
</tr>
<tr>
<td>Method * Style</td>
<td>12.945</td>
<td>6</td>
<td>2.158</td>
<td>2.049</td>
<td>.075</td>
</tr>
<tr>
<td>Error</td>
<td>56.848</td>
<td>54</td>
<td>1.053</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>359.000</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>90.985</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. R Squared = .375 (Adjusted R Squared = .248)

The main effect for method of instruction is found to be statistically insignificant, $F(2, 54) = 0.349$, $p = 0.707$. In the same way, the results show an insignificant interaction between training methods and learning styles, $F(6, 54) = 2.049$, $p = 0.075$ indicating that the trainees with different learning styles and in different learning
environments do not show differences in learning performance (knowledge acquisition) (see Figure: 5.4 for a graph of this interaction effect). However Table- 9, indicates a significant main effect for learning style, $F (3, 54) = 4.602, p = 0.006$.

Based on the above observations, the null hypotheses, $H_3_0$ is rejected in favour of the alternate hypotheses, $H_3_1$. On the other hand, we fail to reject the null hypotheses $H_2_0$ and $H_4_0$ for the main effect of training methods and interaction.

$H_2_0$ states that there does not exist any significant difference in mean performance of trainees in the three instructional groups. From Table - 9, it is found that the $p$- value is greater than 0.05, and so the null hypothesis ($H_2_0$) fails to be rejected. There is sufficient evidence to conclude that the mean performances of trainees in the three instructional groups do not differ.

**FIGURE – 5.2: MAIN EFFECT OF TRAINING METHODS**

![Figure 5.2](image)

The hypothesis, $H_3_0$ contends that there does not exist any significant difference between the mean performances of trainees of different learning styles. As shown in Table - 9, the $p$- value of 0.006 for learning styles is less than 0.05 and so the null hypothesis ($H_3_0$) stands rejected. Thus, there is sufficient evidence to conclude that
there is a significant difference in the mean performance of trainees based on their styles of learning.

**FIGURE – 5.3: MAIN EFFECT OF LEARNING STYLES**

Interaction effect represents the combined effects of factors on the dependent variable. In this study, we fail to reject the hypothesis $H_{40}$, which states that there does not exist any significant relationship between training methods and learning style based on performance scores. We find from Table - 9, for two-way ANOVA, that the $p$-value for the interaction is greater than 0.05.

Hence, we can conclude that based upon the performance scores, there is no interaction between instructional methods and learning styles. That is, the combined effect of these two variables does not affect the performances of trainees.

Besides the lines are also nearly parallel to each other, therefore, the Figure – 5.4 confirms the finding, that there is a statistically insignificant interaction between methods of instruction and an individual's learning style or vice versa.
5.3.2- Main Effects

In the present study, although the main effect for instructional methods and the interaction effect have been found to be insignificant, but we have observed a significant main effect for learning styles (see Table - 10). Furthermore, we have four levels of learning styles, and so it is important to conduct a Post Hoc to determine which pairs or combinations of means differ. Post Hoc provides pair wise comparison among the marginal means for the significant main effects.

Post Hoc for learning styles

The mean score and standard error of each learning style group is shown in Table- 10. It can be said that participants with accommodating style showed a comparatively higher mean learning (M= 2.723) than those with diverging (M= 2.160), assimilating (M=1.984) and converging styles (M=1.889), $F (3, 54) = 3.188, p = 0.031$ (From Table - 9).
This difference in the performance is evident in Figure - 5.3. It is apparent from the plot that trainees with accommodating style showed the greatest mean performance, while those with converging style showed the least score, among the trainees with the four learning styles.

Given that the main effect indicates that, there are differences amongst the means for the trainees trained with the four different learning styles, so a post hoc test is a reasonable follow-up in order to know exactly where the differences are. A post hoc test on this main effect will reveal more about the differences in degree of learning in the trainees with the four different styles of learning.

**TABLE - 10: MAIN EFFECT OF LEARNING STYLES**

<table>
<thead>
<tr>
<th>Method</th>
<th>Mean</th>
<th>Std. Error</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodating</td>
<td>2.377</td>
<td>.188</td>
<td>2.000 - 2.754</td>
</tr>
<tr>
<td>Diverging</td>
<td>1.472</td>
<td>.296</td>
<td>.878 - 2.066</td>
</tr>
<tr>
<td>Assimilating</td>
<td>1.833</td>
<td>.401</td>
<td>1.029 - 2.637</td>
</tr>
<tr>
<td>Converging</td>
<td>1.100</td>
<td>.348</td>
<td>.403 - 1.797</td>
</tr>
</tbody>
</table>

A Fisher's LSD post hoc test (Table - 11) reveals that the mean values of learning performance is significantly different for trainees with accommodating and diverging ($M_{diff} = 0.86$, 95% CI [0.18, 1.54], $p = 0.014$) as well as accommodating and converging style ($M_{diff} = 1.40$, 95% CI [0.65, 2.15], $p = 0.000$).

Furthermore, there is also a significant difference between diverging and assimilating ($M_{diff} = -0.85$, 95% CI [-1.65, -0.04], $p = 0.040$) as also between assimilating and converging ($M_{diff} = 1.38$, 95% CI [0.52, 2.25], $p = 0.002$) [Confidence interval does not contain a zero, indicating a significant difference in the mean scores].

However we fail to notice any significant differences between accommodating and assimilating ($M_{diff} = 0.02$, 95% CI [-0.67, 1.70], $p = 0.964$) as well as diverging and
converging \((M_{\text{diff}} = -0.33, 95\% \text{ CI} [-0.09, 1.31], p = 0.135)\). We notice that the confidence interval contains a zero indicating that there is statistically insignificant difference between the two means.

Conversely, the mean differences (I-J) for all the three pairs of converging has a negative value, \(MD_{\text{conv-ac}} = -1.40\), \(MD_{\text{conv-div}} = -0.54\) and \(MD_{\text{conv-assi}} = -1.38\). While all the three pairs with accommodating have a positive value, \(MD_{\text{acco-div}} = 0.86\), \(MD_{\text{acco-assi}} = 0.02\) and \(MD_{\text{acco-conv}} = 1.40\).

**TABLE - 11: LSD POST HOC FOR LEARNING STYLES**

<table>
<thead>
<tr>
<th>(I) Style</th>
<th>(J) Style</th>
<th>Mean Difference</th>
<th>Std. Error</th>
<th>Std. Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accomodating</td>
<td>Diverging</td>
<td>.86*</td>
<td>.341</td>
<td>.014</td>
<td>.18</td>
</tr>
<tr>
<td></td>
<td>Assimilating</td>
<td>.02</td>
<td>.341</td>
<td>.964</td>
<td>-.67</td>
</tr>
<tr>
<td></td>
<td>Converging</td>
<td>1.40*</td>
<td>.375</td>
<td>.000</td>
<td>.65</td>
</tr>
<tr>
<td>Diverging</td>
<td>Accomodating</td>
<td>-.86*</td>
<td>.341</td>
<td>.014</td>
<td>-1.54</td>
</tr>
<tr>
<td></td>
<td>Assimilating</td>
<td>-.85*</td>
<td>.402</td>
<td>.040</td>
<td>-1.65</td>
</tr>
<tr>
<td></td>
<td>Converging</td>
<td>.54</td>
<td>.432</td>
<td>.218</td>
<td>-.33</td>
</tr>
<tr>
<td>Assimilating</td>
<td>Accomodating</td>
<td>-.02</td>
<td>.341</td>
<td>.964</td>
<td>-.70</td>
</tr>
<tr>
<td></td>
<td>Diverging</td>
<td>.85*</td>
<td>.402</td>
<td>.040</td>
<td>.04</td>
</tr>
<tr>
<td></td>
<td>Converging</td>
<td>1.38*</td>
<td>.432</td>
<td>.002</td>
<td>.52</td>
</tr>
<tr>
<td>Converging</td>
<td>Accomodating</td>
<td>-1.40*</td>
<td>.375</td>
<td>.000</td>
<td>-2.15</td>
</tr>
<tr>
<td></td>
<td>Diverging</td>
<td>-.54</td>
<td>.432</td>
<td>.218</td>
<td>-1.40</td>
</tr>
<tr>
<td></td>
<td>Assimilating</td>
<td>-1.38*</td>
<td>.432</td>
<td>.002</td>
<td>-2.25</td>
</tr>
</tbody>
</table>

Based on observed means.
The error term is Mean Square (Error) = 1.053.
* The mean difference is significant at the .05 level.
So, we may conclude that for interpersonal communication skills training, the accommodators showed a much greater performance as compared to trainees with the other learning styles, and specifically the trainees with diverging and converging style.

5.3.3- Relationship between Preferred Mode of Instruction and Learning Style

A chi square test of association was employed to assess the association between the two categorical variables that is, learning style according to Kolb’s LSI and the preferred choice of instructional method for acquiring skills for effective interpersonal communication. The cross tabulation of the individual learning styles with respect to the choice of preferred training method is presented in Table - 12.

| TABLE - 12: CROSS-TABULATION OF LEARNING STYLE AND PREFERRED METHOD OF INSTRUCTION |
|---------------------------------------------------------------|-----------------|---------------|---------------|-----------------|---------------|
| Preferred method                                             | Videos          | Role-play     | Blended       | cum             |
| Style             | Count  | Lecture | Learning | Discussion | Total |
| Accommodating     | Count   | 1       | 11       | 10           | 8    | 30   |
| % within Style    | 3.3%    | 36.7%   | 33.3%    | 26.7%        | 100.0% |
| Diverging         | Count   | 2       | 2        | 3            | 6    | 13   |
| % within Style    | 15.4%   | 15.4%   | 23.1%    | 46.2%        | 100.0% |
| Assimilating      | Count   | 5       | 1        | 3            | 4    | 13   |
| % within Style    | 38.5%   | 7.7%    | 23.1%    | 30.8%        | 100.0% |
| Converging        | Count   | 2       | 0        | 5            | 3    | 10   |
| % within Style    | 20.0%   | .0%     | 50.0%    | 30.0%        | 100.0% |
| Total             | Count   | 10      | 14       | 21           | 21   | 66   |
| % within Style    | 15.2%   | 21.2%   | 31.8%    | 31.8%        | 100.0% |

It reveals that accommodators mostly prefer to learn through role-plays (36.7%) and least preferred the lecture format (3.3%). Nearly 50% of the individuals with diverging style desired to learn by videos cum discussion. An interesting observation
was that in spite of rapid technological advances and introduction of new formats of learning, almost 40% of the assimilators seemed to prefer the traditional chalk and talk mode over the other three methodologies of instruction. Converging individuals predominantly preferred blended learning, which incorporated a short lecture followed by online modules, (50%) while none opted for the role-plays.

Figure – 5.5 illustrates these findings in graphical format to get a better picture of the distribution of preferences of particular methods with regard to the individual style of learning. It appears that today's learners are more inclined towards newer methodologies of training and they tend to show greater inclination for videos cum discussion as well as the blended approach to learning, with about 30% of the trainees favouring each of the two over the lectures and role-plays.

Table - 13 presents the chi-square test of association, which gauged the relationship between an individual's learning style and preference for a particular instructional methodology.

**FIGURE - 5.5: PREFERRED METHOD OF LEARNING ACCORDING TO LEARNING STYLE**
The results reveal a significant relationship between the two variables of interest ($\chi^2 = 17.200, p = 0.046; p < 0.05$). Since the $p$-value of 0.046 for the chi-square test of association is less than 0.05, so we reject the null hypotheses, $H_0$. Consequently, there is sufficient evidence to conclude that there is a relationship between an individual's learning style and how they prefer to be trained.

**TABLE - 13: CHI-SQUARE ANALYSIS OF LEARNING STYLE AND PREFERRED TRAINING METHOD**

<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>17.200a</td>
<td>9</td>
<td>.046</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>18.798</td>
<td>9</td>
<td>.027</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>.126</td>
<td>1</td>
<td>.723</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>66</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 12 cells (75.0%) have expected count less than 5. The minimum expected count is 1.83.

### 5.4 - FINDINGS OF CASE STUDY # 2

Customer service is prevalent in almost all types of industries, and customers look to the employees to provide good customer service. An important aspect of any customer service is interpersonal communication. So, the second case study is concerned with the training of retail sector employees in the skills intended for customer service, particularly improving their interpersonal communication skills. Customer service executives are the face of the organization, and so it is imperative to instill appropriate interpersonal communication expertise for enhanced performance and customer satisfaction.

Sixty four (64) employees were provided training in interpersonal communication skills which is fundamental in understanding and creating happy customers. The employees were randomly selected from three different groups (based on different instructional interventions). Twenty two employees were from the lecture group,
twenty one from videos cum discussion sessions and twenty one from role-play group. The same trainer trained employees in the three different training groups.

A questionnaire, comprising of 21 questions was designed to assess the level of knowledge of the trainees regarding interpersonal communication skills. The trainees were required to complete the test both prior to the commencement of training as also upon the completion of the training programme. In order to examine the effectiveness of the three instructional methodologies, an analysis of trainees’ learning performance was carried out (the difference between post and pre test scores). This is the dependent variable, based on which the effectiveness of the methods have been assessed.

Figure – 5.6 shows the distribution of both the pre-test and post-test score of the trainees, their overall mean as also their standard deviation. A total of sixty four ($N_{total} = 64$) employees undertook the training in interpersonal communication skills. The gender break down shows that 65.6% of the trainees were male while 34.4% were female. By age, 82.2% of the trainees were under 30; 17.2% were between 30- 45 and none were over 45.

**FIGURE: 5.6 - FREQUENCY DISTRIBUTION OF THE PRE-TEST AND POST-TEST SCORES**
In order to test the first research question, a paired samples t-test was conducted to evaluate the impact of the intervention on trainees’ performance scores. Table - 14 provides the descriptive statistics for both the pre-test as well as post-test scores. Overall, the mean of the pre-test score was 16.06, whereas the mean for post-test came out to be 17.72, indicating an overall improvement in the learning of the trainees because of the training undertaken.

**TABLE - 14: PAIRED SAMPLES STATISTICS**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test</td>
<td>16.06</td>
<td>64</td>
<td>1.468</td>
<td>.183</td>
</tr>
<tr>
<td>Post-test</td>
<td>17.72</td>
<td>64</td>
<td>1.538</td>
<td>.192</td>
</tr>
</tbody>
</table>

Furthermore, from Table - 15, we find that there is a strong positive correlation (0.817) and so trainees who performed well in the pre-test did well in the post-test. The result of the paired t-test (Table - 16) shows that there was a statistically significant increase in the overall performance scores of trainees from pre-test ($M = 16.06$, $SD = 1.468$) to post-test ($M = 17.72$, $SD = 1.538$), $t (63) = -14.523$, $p < .05$ (two-tailed).

**TABLE - 15: PAIRED SAMPLES CORRELATIONS**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Correlation</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test &amp; post-test</td>
<td>64</td>
<td>.817</td>
<td>.000</td>
</tr>
</tbody>
</table>

The mean increase in overall performance scores of trainees was 1.656 with a 95% confidence interval ranging from -1.884 to -1.428. Consequently, we reject the null hypothesis, $H_{0}$, and with sufficient evidence it can be concluded that there was an improvement in the performance of trainees after the training intervention.

In order to examine the learning performance of trainees in the three different groups (trained by way of three different methods) with different learning styles, two-way ANOVA was employed. Table - 17 presents the detail outline of the means, standard deviations and group sizes (N) for all sub-groups of the independent variable.
TABLE - 16: PAIRED SAMPLES TEST

<table>
<thead>
<tr>
<th>Pair</th>
<th>Pre-test</th>
<th>Std. Deviation</th>
<th>Mean</th>
<th>Std. Error</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>post-test</td>
<td>1.656</td>
<td>.912</td>
<td>.114</td>
<td>-1.884</td>
<td>-1.428</td>
<td>-14.523</td>
<td>63</td>
<td>.000</td>
</tr>
</tbody>
</table>

The first row representing the lecture group, presents the descriptive information for each sub-group (learning style) that were part of the lecture session. The sub-group includes the four styles of learning – accommodators, divergers, assimilators and convergers (according to Kolb’s learning style inventory). The mean learning was highest for the assimilators, $M_{ass} = 2.33$, $N_{ass} = 6$, while it was lowest for divergers, $M_{div} = 0.67$, $N_{div} = 3$. The last line, labeled Total in this row provides the descriptive information of everyone in the lecture group.

In the same way, the second row presents the descriptive information for the four learning style sub-groups who were part of the videos cum discussion (VD) session. The mean learning in the VD environment was highest for trainees with accommodating style of learning, $M_{acco} = 2.00$, $N_{acco} = 6$. Whereas the mean score of learning was lowest for trainees with converging learning style, $M_{conv} = 1.14$, $N_{conv} = 7$. The detailed information for the group 2 of the main independent variable (videos along discussion group of trainees) is given in the last line, Total of this row.

The third row in Table - 17, presents the descriptive information of all the trainees in the third group of the focal independent variable, that is, the role-play group. For this third group of trainees, the mean learning performance was highest for the accommodators, $M_{acco} = 2.50$, $N_{acco} = 8$, while it was lowest for the trainees with converging style, $M_{conv} = 1.00$, $N_{conv} = 2$. The last line identified with the label, Total, represents the descriptive information of everyone in the role-play group.
TABLE - 17: DESCRIPTIVE STATISTICS OF CASE STUDY# 2

<table>
<thead>
<tr>
<th>Method</th>
<th>Style</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Accommodating</td>
<td>1.09</td>
<td>.831</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Diverging</td>
<td>.67</td>
<td>.577</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Assimilating</td>
<td>2.33</td>
<td>1.211</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Converging</td>
<td>1.00</td>
<td>.000</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1.36</td>
<td>1.049</td>
<td>22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Videos cum discussion</th>
<th>Style</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodating</td>
<td>2.00</td>
<td>.632</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Diverging</td>
<td>1.67</td>
<td>.577</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Assimilating</td>
<td>1.80</td>
<td>.837</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Converging</td>
<td>1.14</td>
<td>.690</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.62</td>
<td>.740</td>
<td>21</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Role-play</th>
<th>Style</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodating</td>
<td>2.50</td>
<td>.926</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Diverging</td>
<td>1.83</td>
<td>.408</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Assimilating</td>
<td>1.80</td>
<td>.837</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Converging</td>
<td>1.00</td>
<td>.000</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.00</td>
<td>.837</td>
<td>21</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total</th>
<th>Style</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodating</td>
<td>1.76</td>
<td>1.012</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Diverging</td>
<td>1.50</td>
<td>.674</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Assimilating</td>
<td>2.00</td>
<td>.966</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Converging</td>
<td>1.09</td>
<td>.539</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.66</td>
<td>.912</td>
<td>64</td>
<td></td>
</tr>
</tbody>
</table>

The fourth and the final row of the above block (Table-17) provides the descriptive information for each group of the moderator independent variable (learning styles), which is identified by their respective value labels. Lastly, at the very bottom of the fourth row, also labeled as Total, the descriptive information for the total sample is presented.
Across all training methods, the mean learning performance appears to be highest for the trainees with assimilating style (2.00), while for the trainees with diverging style; the performance score tends to be much lower (1.09). The overall group learning ($N_{total} = 64$) of the three training groups had a mean learning of 1.66 with a standard deviation of 0.912.

5.4.1 - Results of 3 × 4 ANOVA

In the present case study, the three levels of the focal independent variable, which is training methods, are lecture, videos cum discussion and role-play. The moderator variable, which is learning style, has four levels (accommodating, diverging, assimilating and converging). Therefore, 3×4 factorial ANOVA was utilized to carry out the requisite statistical analysis.

One of the assumptions of ANOVA is that the variances of the groups being compared are similar, that is, the groups have approximately equal variance on the dependent variable.

Table - 18 shows the result of Levene’s Test of Homogeneity of Variance, which tests for similar variances. If the Levene’s Test is significant (the value under "Sig." is less than 0.05), the two variances are significantly different. If it is not significant (Sig. is greater than 0.05), the two variances are not significantly different; that is, the two variances are approximately equal. If the Levene’s test is not significant, we have met the assumption of ANOVA.

**TABLE - 18: LEVENE’S TEST OF EQUALITY OF ERROR VARIANCES**

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.887</td>
<td>11</td>
<td>52</td>
<td>.063</td>
</tr>
</tbody>
</table>

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + Method + Style + Method * Style
From Table - 18, it can be seen that the $F$-value is 1.887 and the significance $p$-value is 0.063, which is greater than 0.05. Therefore, we can assume that the variances of the cells are not significantly different, that is they are approximately equal.

The initial analysis is the output of the ANOVA table (Table - 19) which assesses whether there is a difference among the 12 cell means ($3 \times 4$ factors) and provides a summary of two-way ANOVA. The results for the $3 \times 4$ ANOVA indicates a statistically significant $F$ statistic, $F = 2.815$, $p = 0.006$. Since the overall test is significant, the focus turns to the factors that may be driving the significance (that is, training methods, learning style or the interaction between the two).

**TABLE - 19: TWO-WAY ANALYSIS OF VARIANCE**

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of</th>
<th>Source</th>
<th>Type III Sum of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>$19.571^a$</td>
<td>Intercept</td>
<td>121.251</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1.779</td>
<td>121.251</td>
<td>191.839</td>
</tr>
<tr>
<td></td>
<td>2.815</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>.006</td>
<td>Method</td>
<td>2.151</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>1.075</td>
</tr>
<tr>
<td></td>
<td>1.702</td>
<td></td>
<td>.192</td>
</tr>
<tr>
<td></td>
<td>.192</td>
<td>Style</td>
<td>6.251</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td>2.084</td>
</tr>
<tr>
<td></td>
<td>3.297</td>
<td></td>
<td>.027</td>
</tr>
<tr>
<td>Method Style</td>
<td>8.267</td>
<td></td>
<td>1.378</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>2.180</td>
<td>.060</td>
</tr>
<tr>
<td></td>
<td>.060</td>
<td>Error</td>
<td>32.866</td>
</tr>
<tr>
<td></td>
<td>52</td>
<td></td>
<td>.632</td>
</tr>
<tr>
<td></td>
<td>.632</td>
<td>Total</td>
<td>228.000</td>
</tr>
<tr>
<td></td>
<td>64</td>
<td>Corrected Total</td>
<td>52.437</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. $R^2 = .373$ (Adjusted $R^2 = .241$)

ANOVA reveals an insignificant main effect of training methodology (lecture, role-play and videos cum discussion), $F (2, 52) = 1.702$, $MS_{error} = 32.866$, $p = 0.192$, $\alpha = 0.05$. As the $p$ value is greater than 0.05, so we fail to reject the null hypothesis ($H_{20}$) and there is sufficient evidence to conclude that the mean learning performance of the trainees in the three instructional groups donot differ significantly. That is, there is sufficient evidence to conclude that training imparted through lecture, videos with discussion and role-play approach lead to equivalent performance.
In other words, other things being equal, the effectiveness of the three different training methods is similar. This is clearly elucidated in Figure 5.7, for main effects of training methods, where the mean learning scores ranges from around 1.30 to 1.80. This order of difference is quite small to be significantly different, and so we see an insignificant main effect for instructional methodology.

Furthermore, the $3 \times 4$ full factorial between-subjects analysis of variance (ANOVA) reveals a significant main effect for learning styles (accommodating, diverging, assimilating and converging), $F(3, 52) = 3.297, p = 0.027$, Since the $p$-value is less than 0.05 ($\alpha$), so we can reject the null hypothesis ($H_{0}$). That is, there is sufficient evidence to conclude that the learning performance of the trainees with different learning styles differs significantly.

**FIGURE: 5.7 - MAIN EFFECT OF TRAINING METHODS**

Therefore, we can conclude from this that, ceteris paribus, individuals with different learning styles perform differently. Figure 5.8 also exhibits this significant difference, wherein the learning performance of the trainees with the four different styles of learning shows a peak performance for the accommodators and assimilators, and a quite low score for the convergers.
Consequently, it has been found that the main effect of learning styles on learning performance is significant but the main effect of training method on learning performance is insignificant, such that trainees with the accommodating style performed better than those with converging style.

**FIGURE: 5.8 - MAIN EFFECT OF LEARNING STYLE**

Interaction effect represents the combined effects of the factors on dependent variable. Table- 19 further reveals an insignificant two-way interaction between the three different training methods and the four different learning styles on learning performance, $F (6, 52) = 2.180, p = 0.060$. Since, the $p$-value is greater than 0.05 so we fail to reject the null hypothesis ($H_4o$).

That is, there is sufficient evidence to conclude that the trainees with different learning styles illustrate no difference in learning performance with different instructional methods [Figure – 5.9 presents the plot of this interaction]. Since the lines are virtually parallel to each other, therefore, Figure – 5.9 confirms this finding of insignificant interaction effect.
5.4.2- Main Effects

In the present study, besides the insignificant interaction effect and insignificant main effect of instructional methods, we have also observed a significant main effect for learning styles, $F \left( 2, 52 \right) = 2.809, p = 0.048$ (see Table - 19). Furthermore, we have four levels of learning style, and so it is important to conduct a Post Hoc to determine which pairs or combinations of means differ. Post Hoc provides pair-wise comparison among the marginal means for the significant main effects.

Post Hoc for learning styles

Table - 20, reports the mean scores of the trainees with any of the four learning styles. It is found that participants with assimilating (M= 1.990) style tend to perform better than those with accommodating (M= 1.895), diverging (M= 1.690) or converging (M= 1.000) styles.
This difference in the effectiveness is clearly depicted in Figure 7. It is apparent from the plot that trainees with assimilating and accommodating perform exceptionally better than those with converging style.

**TABLE - 20: MAIN EFFECT OF LEARNING STYLES**

<table>
<thead>
<tr>
<th>Style</th>
<th>Mean</th>
<th>Std. Error</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodating</td>
<td>1.864</td>
<td>.164</td>
<td>1.535 - 2.193</td>
</tr>
<tr>
<td>Diverging</td>
<td>1.389</td>
<td>.242</td>
<td>.903 - 1.874</td>
</tr>
<tr>
<td>Assimilating</td>
<td>1.978</td>
<td>.199</td>
<td>1.577 - 2.378</td>
</tr>
<tr>
<td>Converging</td>
<td>1.048</td>
<td>.283</td>
<td>.479 - 1.616</td>
</tr>
</tbody>
</table>

Post hoc analysis (LSD method) was also used to compare the performance of different learning styles (see Table - 21). It reveals that the mean values of learning performance is not significantly different for trainees with accommodating and diverging style ($M_{\text{diff}} = 0.26, 95\% \text{ CI} [-0.30, 0.82], p = 0.356$), accommodating and assimilating style ($M_{\text{diff}} = -0.24, 95\% \text{ CI} [-0.75, 0.27], p = 0.350$).

Moreover, we also observe that there is no significant difference for trainees with diverging and assimilating ($M_{\text{diff}} = -0.50, 95\% \text{ CI} [-1.11, 0.11], p = 0.106$) as also diverging and converging style ($M_{\text{diff}} = 0.41, 95\% \text{ CI} [-0.26, 1.08], p = 0.223$).

However, there does appear to be a statistically significant difference between the means of the trainees with accommodating and converging ($M_{\text{diff}} = 0.67, 95\% \text{ CI} [0.09, 1.25], p = 0.024$) as also assimilating and converging style ($M_{\text{diff}} = 0.91, 95\% \text{ CI} [0.28, 1.53], p = 0.005$).

Besides, the mean differences (I-J) for the trainees with converging style has a negative value for all the three pairs, $\text{MD}_{\text{conv-assi}} = -0.91$, $\text{MD}_{\text{conv-acco}} = -0.67$ and $\text{MD}_{\text{conv-div}} = -0.41$.

Since only the former two pairs show a significant difference ($p_{\text{conv-assi}} = 0.005$ and $p_{\text{conv-acco}} = 0.024$), so we may conclude that for interpersonal communication skills
training, the trainees with accommodating and assimilating styles show significantly better performance than trainees with converging style.

**TABLE 21: LSD POST HOC FOR LEARNING STYLES**

<table>
<thead>
<tr>
<th>(I) Style</th>
<th>(J) Style</th>
<th>Mean Difference</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval Lower</th>
<th>95% Confidence Interval Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodating</td>
<td>Diverging</td>
<td>.26</td>
<td>.279</td>
<td>.356</td>
<td>-.30</td>
<td>.82</td>
</tr>
<tr>
<td>Assimilating</td>
<td>Converging</td>
<td>-.24</td>
<td>.255</td>
<td>.350</td>
<td>-.75</td>
<td>.27</td>
</tr>
<tr>
<td>Converging</td>
<td>Diverging</td>
<td>.67*</td>
<td>.288</td>
<td>.024</td>
<td>.09</td>
<td>1.25</td>
</tr>
<tr>
<td>Diverging</td>
<td>Accommodating</td>
<td>-.26</td>
<td>.279</td>
<td>.356</td>
<td>-.82</td>
<td>.30</td>
</tr>
<tr>
<td>Assimilating</td>
<td>Converging</td>
<td>-.50</td>
<td>.304</td>
<td>.106</td>
<td>-1.11</td>
<td>.11</td>
</tr>
<tr>
<td>Converging</td>
<td>Diverging</td>
<td>.41</td>
<td>.332</td>
<td>.223</td>
<td>-.26</td>
<td>1.08</td>
</tr>
<tr>
<td>Assimilating</td>
<td>Converging</td>
<td>.24</td>
<td>.255</td>
<td>.350</td>
<td>-.27</td>
<td>.75</td>
</tr>
<tr>
<td>Diverging</td>
<td>Converging</td>
<td>.50</td>
<td>.304</td>
<td>.106</td>
<td>-1.11</td>
<td>1.11</td>
</tr>
<tr>
<td>Converging</td>
<td>Assimilating</td>
<td>.91*</td>
<td>.311</td>
<td>.005</td>
<td>.28</td>
<td>1.53</td>
</tr>
<tr>
<td>Converging</td>
<td>Diverging</td>
<td>- .67*</td>
<td>.288</td>
<td>.024</td>
<td>-1.25</td>
<td>-.09</td>
</tr>
<tr>
<td>Assimilating</td>
<td>Converging</td>
<td>-.41</td>
<td>.332</td>
<td>.223</td>
<td>-1.08</td>
<td>.26</td>
</tr>
</tbody>
</table>

*Based on observed means.
The error term is Mean Square (Error) = .632.
* The mean difference is significant at the .05 level.

5.4.3 - Relationship between Preferred Mode of Instruction and Learning Style

A chi square test of association was employed to assess the association between the two categorical variables that is, learning style according to Kolb's LSI and the preferred choice of instructional method for acquiring skills for effective inter personal communication. The cross tabulation of the individual learning styles with respect to the choice of preferred training method is presented in Table - 22.
It reveals that accommodators mostly prefer to learn through role-plays (36%) and least preferred the lecture format (12%). Diverging style individuals mostly desired to learn by videos cum discussion format (33%).

An interesting observation was that in spite of rapid technological advances and introduction of new formats of learning (and as observed in the former case study of medical sales representatives training) nearly 45% of the assimilators seemed to prefer the traditional chalk and talk mode over the other three methodologies of instruction. Converging individuals predominantly preferred blended learning (~65%), which incorporated a short lecture followed by online modules.

**TABLE - 22: CROSS-TABULATION OF LEARNING STYLE AND PREFERRED METHOD OF INSTRUCTION**

<table>
<thead>
<tr>
<th>Preferred method</th>
<th>Videos</th>
<th>Role-</th>
<th>Blended</th>
<th>cum</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lecture</td>
<td>play</td>
<td>learning</td>
<td>Discussion</td>
</tr>
<tr>
<td>Style</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accommodating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diverging</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assimilating</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Converging</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

|                  |        |       |         |       |       | |
| % within Style    |        |       |         |       |       | |
| Count             | 3      | 9     | 7       | 6    | 25    | |
| % within Style    | 12.0%  | 36.0% | 28.0%   | 24.0%|       | |
| Count             | 3      | 3     | 2       | 4    | 12    | |
| % within Style    | 25.0%  | 25.0% | 16.7%   | 33.3%|       | |
| Count             | 7      | 0     | 6       | 3    | 16    | |
| % within Style    | 43.8%  | .0%   | 37.5%   | 18.8%|       | |
| Count             | 2      | 1     | 7       | 1    | 11    | |
| % within Style    | 18.2%  | 9.1%  | 63.6%   | 9.1% |       | |
| Count             | 15     | 13    | 22      | 14   | 64    | |
| % within Style    | 23.4%  | 20.3% | 34.4%   | 21.9%|       | |

Figure – 5.10 illustrates these findings in graphical format to get a better picture of the distribution of preferences of particular methods with regard to the individual style of learning. It appears that nearly 35% of the trainees favoured blended approach to the other modes of instruction.
FIGURE: 5.10 - PREFERRED METHOD OF LEARNING ACCORDING TO LEARNING STYLE

![Bar chart showing preferred method of learning according to learning style.

TABLE - 23: CHI-SQUARE ANALYSIS OF LEARNING STYLE AND PREFERRED TRAINING METHOD

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>17.286a</td>
<td>9</td>
<td>.044</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>19.732</td>
<td>9</td>
<td>.020</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>.175</td>
<td>1</td>
<td>.676</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 11 cells (68.8%) have expected count less than 5. The minimum expected count is 2.23.

Table - 23 presents the chi-square test of association, which was used to gauge the relationship between an individual's learning style and preference for a particular
instructional methodology. The results reveal a statistically significant relationship between the two variables of interest ($\chi^2 = 17.286, p = 0.044; p < 0.05$).

Since the $p$-value of 0.044 for the chi-square test of association is less than 0.05, so we reject the null hypotheses, $H_0$. Consequently, there is sufficient evidence to conclude that there is a relationship between an individual's learning style and how s/he prefers to be trained.

5.5 - FINDINGS OF CASE STUDY # 3

The last case study was related to the interpersonal communication skills training of employees of a manufacturing organization. Employees in a manufacturing enterprise are involved in much more than just machinery, gears, and human hands working to create various items. As to any sector, effective interpersonal relationships are very important to the manufacturing industry as well.

Fifty-one employees were trained in the skills required for managing relationships and facilitating effective communication in the workplace to ensure smooth production and a positive work environment. In order to compare the effectiveness of the alternative modes, three methods were adopted, and the employees were randomly selected from each of these three groups.

Nineteen employees were selected from the lecture group, sixteen from videos cum discussion session and sixteen from the role-play session. One trainer undertook the training for the lecture and the videos cum discussion group, while a different trainer guided the trainees in the role-play session.

A comprehensive 21-item questionnaire was designed to assess the level of knowledge of the trainees regarding interpersonal communication skills necessary in a workplace. Subjects completed the test both before the commencement of training and after the completion of the training programme.

In order to examine the effectiveness of the three instructional methodologies, an analysis of trainees' learning performance was carried out (the difference between
post and pre test scores). Figure-1 shows the distribution of trainees’ pre-test and post-test score, their overall mean and standard deviation.

**FIGURE: 5.11 - FREQUENCY DISTRIBUTION OF THE PRE-TEST AND POST-TEST SCORES**

A total of Fifty one \(N_{\text{total}} = 51\) trainees’ undertook the training in interpersonal communication skills. The gender break down shows that 72.5% of the trainees were male while 27.5% were female. By age, 33.3% of the trainees were under 30; 54.9% were between 30-45 and 11.8% were over 45.

In order to test the first research question, a paired samples t-test was conducted to evaluate the impact of the intervention on trainees’ performance scores. The paired samples t-test computes the difference between the pre-test and post-test scores of each trainee, as also tests to see if the average difference is significantly different from zero.

Table - 24 provides the descriptive statistics for both the pre-test as well as post-test scores. The overall mean pre-test score was 16.51, while the mean post-test score was

137
18.20, indicating an overall improvement in the learning of the trainees because of the training undertaken.

**TABLE - 24: PAIRED SAMPLES STATISTICS**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>Pre-test</td>
<td>16.51</td>
<td>51</td>
<td>1.189</td>
<td>.167</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>18.20</td>
<td>51</td>
<td>1.167</td>
<td>.163</td>
</tr>
</tbody>
</table>

Further from Table - 25, we find that there is a positive correlation (0.676) and so trainees who performed well in the pre-test also did well in the post-test.

**Table - 25: Paired Samples Correlations**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Correlation</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>51</td>
<td>.676</td>
<td>.000</td>
</tr>
</tbody>
</table>

The result of the paired t-test (Table - 26) shows that there was a statistically significant increase in the overall performance scores of trainees from pre-test ($M = 16.51, SD = 1.189$) to post-test ($M = 18.20, SD = 1.167$), $t (51) = -12.697, p < .05$ (two-tailed). The mean increase in overall performance scores of trainees was 1.686 with a 95% confidence interval ranging from -1.953 to -1.420.

**TABLE - 26: PAIRED SAMPLES TEST**

<table>
<thead>
<tr>
<th></th>
<th>95% Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. Deviation</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Pair</td>
<td>Pre-test</td>
</tr>
<tr>
<td>1</td>
<td>post-test</td>
</tr>
</tbody>
</table>

138
Consequently, we reject the null hypothesis, $H_0$, and we have sufficient evidence to conclude that there was an improvement in the performance of trainees after the training intervention.

In order to find answers to the research questions 2, 3 and 4, a two-way ANOVA was employed. It was used to determine the learning performance of trainees in the three separate groups (trained by way of three different instructional methods) with different learning styles. The means, standard deviations and group sizes ($N$) for all sub-groups, independent variable groups and the total sample is reported in Table - 27.

The first row (the lecture group), presents the descriptive information for each sub-group that were part of the lecture session. The sub-group includes the four styles of learning – accommodators, divergers, assimilators and convergers (according to Kolb’s learning style inventory). The mean learning in the lecture session was highest for the accommodating, $M_{acco}= 2.67$, $N_{acco}= 3$, while it was lowest for converging, $M_{conv}= 0.80$, $N_{conv}= 5$. The last line, labeled Total in this row provides the descriptive information of everybody in group 1 of the focal independent variable, which is the lecture group.

Similarly, the second row, labeled as videos cum discussion presents the descriptive information for the four learning style sub-groups who were part of this session. In this group, the mean learning was equally highest for accommodators, $M_{acco}= 1.60$, $N_{acco}= 5$ as well as divergers, $M_{div}= 1.60$, $N_{div}= 5$ while it was lowest for the assimilating ($M_{assi} = 0.50$, $N_{assi} = 2$). The information for the group 2 of the main independent variable (videos cum discussion session of trainees) is given in the last line, Total of this row.

The third row in this block (Table - 27), presents the descriptive information of all the trainees in the third group of the focal independent variable, the role-play session. In this session also, the accommodators showed the greatest mean learning, $M_{acco}= 2.67$, $N_{acco}= 3$, while the assimilators ($M_{assi} = 1.75$, $N_{assi} = 4$) showed the lowest mean performance score performance. The last line identified with the label, Total, presents the descriptive information for everyone in group 3 (role-play session) of the focal independent variable.
### TABLE - 27: DESCRIPTIVE STATISTICS OF THE CASE STUDY#3

**Dependent Variable: learning performance**

<table>
<thead>
<tr>
<th>Method</th>
<th>Style</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Accommodator</td>
<td>2.67</td>
<td>.577</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Diverger</td>
<td>1.71</td>
<td>.951</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Assimilator</td>
<td>1.50</td>
<td>.577</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Converger</td>
<td>.80</td>
<td>.447</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.58</td>
<td>.902</td>
<td>19</td>
</tr>
<tr>
<td>Videos cum discussion</td>
<td>Accommodator</td>
<td>1.60</td>
<td>.548</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Diverger</td>
<td>1.60</td>
<td>.548</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Assimilator</td>
<td>.50</td>
<td>.707</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Converger</td>
<td>1.00</td>
<td>.816</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.31</td>
<td>.704</td>
<td>16</td>
</tr>
<tr>
<td>Role-play</td>
<td>Accommodator</td>
<td>2.67</td>
<td>1.528</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Diverger</td>
<td>1.83</td>
<td>1.329</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Assimilator</td>
<td>1.75</td>
<td>.500</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Converger</td>
<td>2.33</td>
<td>1.155</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.06</td>
<td>1.124</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>Accommodator</td>
<td>2.18</td>
<td>.982</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Diverger</td>
<td>1.72</td>
<td>.958</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Assimilator</td>
<td>1.40</td>
<td>.699</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Converger</td>
<td>1.25</td>
<td>.965</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.65</td>
<td>.955</td>
<td>51</td>
</tr>
</tbody>
</table>

The fourth and the final row of Table - 27 presents the descriptive information for each group of the moderator independent variable (learning styles), which is identified by their respective value labels. Lastly, at the very bottom of the fourth row, also labeled as Total, the descriptive information for the total sample is presented. Across all training methods, the mean learning was highest for the accommodators, Macco-
2.18. On the other hand, the lowest overall mean learning was for the convergers, \( M_{\text{conv}} = 1.25 \). The overall group learning (\( N_{\text{total}} = 51 \)) of the three training groups had a mean learning of 1.65 with a standard deviation of 0.955.

5.5.1 - Results of 3 × 4 ANOVA

In order to gauge the relationship between the two independent variables (training methods and learning style) and the dependent variable (learning performance), two-way ANOVA was carried out.

**TABLE - 28: LEVENE'S TEST OF EQUALITY OF ERROR VARIANCES**

<table>
<thead>
<tr>
<th>Dependent Variable: learning performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>.982</td>
</tr>
</tbody>
</table>

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + Method + Style + Method * Style

An important assumption of ANOVA is homogeneity of variance, that is, the population variances in all cells of the factorial design are equal. Table - 28 shows the result of Levene’s test for homogeneity of group variance. It is found to be statistically insignificant at \( \alpha = 0.05, F(11, 39) = 0.982, p = 0.479 \), indicating that this assumption underlying the application of the two-way ANOVA has been met. Therefore, there is sufficient evidence to say that there exists no difference in variances between the group means.

Table - 29 provides a summary of the factorial ANOVA. The first test is an overall test to assess whether there is a difference among the 12 cell means (3×4). The results for the 3×4 ANOVA (Table - 29), indicates a statistically significant \( F \) statistic, \( F_{\text{req}} = 1.902, p = 0.049 \). Since the overall test is significant, it is necessary to identify the factors that may be contributing to this significance (that is, training methods, learning style or the interaction between the two).
TABLE - 29: TWO-WAY ANALYSIS OF VARIANCE

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Squares</td>
<td>Df</td>
</tr>
<tr>
<td>Corrected Model</td>
<td>15.935*</td>
<td>11</td>
</tr>
<tr>
<td>Intercept</td>
<td>126.150</td>
<td>1</td>
</tr>
<tr>
<td>Method</td>
<td>6.753</td>
<td>2</td>
</tr>
<tr>
<td>Style</td>
<td>6.872</td>
<td>3</td>
</tr>
<tr>
<td>Method * Style</td>
<td>4.664</td>
<td>6</td>
</tr>
<tr>
<td>Error</td>
<td>29.712</td>
<td>39</td>
</tr>
<tr>
<td>Total</td>
<td>184.000</td>
<td>51</td>
</tr>
<tr>
<td>Corrected Total</td>
<td>45.647</td>
<td>50</td>
</tr>
</tbody>
</table>

a. R Squared = .349 (Adjusted R Squared = .166)

The main effect for method of instruction is found to be statistically significant, \( F (2, 39) = 4.432, p = 0.018 \). Since the \( p \) value is less than 0.05, so we reject the null hypothesis, \( H_0 \), that the learning performance of the trainees in the three instructional groups is not different. That is, there is sufficient evidence to conclude that training imparted through lecture, videos with discussion and role-play approach have different mean learning performance.

In other words, other things being equal, the effectiveness of the three different training methods varies considerably. This is clearly elucidated in Figure - 5.12, for main effects of training methods, where role-play mode shows the peak learning performance, followed by lectures, and much lower performance scores of trainees in the videos cum discussion group.

In addition to the significant main effect of training methods, Table - 29 indicates a significant main effect for learning style, \( F (3, 39) = 3.007, p = 0.042 \). As the \( p \) value is less than 0.05, hence we reject the null hypothesis, \( H_30 \) that is there is adequate evidence to conclude that the mean performance of the trainees with the four different learning styles differs considerably.
FIGURE: 5.12 - MAIN EFFECT OF TRAINING METHODS

FIGURE: 5.13 - MAIN EFFECT OF LEARNING STYLES
Figure 5.13 exhibits this significant main effect, wherein the learning performance of the trainees with the four different styles of learning ranges from 1.25 to 2.30, with the accommodators showing the peak overall performance, while the assimilators the least.

However, we find an insignificant interaction between training methods and learning styles, $F(6, 39) = 1.020, p = 0.427$. Because the significance level is greater than the 0.05 point, therefore we fail to reject the null hypothesis $H_4$, thus indicating that the combined effect of methods of instruction and learning styles results in negligible differences in the learning performance of the trainees (see Figure 5.14 for a graph of this interaction). Furthermore, the lines are also nearly parallel to each other.

5.5.2- Main Effects

A "main effect" is the effect of one of the independent variables on the dependent variable, while ignoring the effect of the other independent variable(s). In the present study, irrespective of the insignificant interaction effect, we have observed a
significant main effect for both instructional methods and learning styles (see Table - 29).

Furthermore, we have three levels of instructional methods, and so it is important to conduct a Post Hoc to determine which pairs or combinations of means differ. Post Hoc provides pair-wise comparison among the marginal means for the significant main effects.

**Post Hoc for training methods**

Table - 30, reports the mean scores of the trainees in the three different instructional groups. It can be said that participants who received training through role-plays had a comparatively higher mean learning ($M= 2.146$) than those who received training with lecture method ($M= 1.670$) and videos cum discussion approach ($M=1.175$), $F (2, 39) = 4.432, p = 0.018$ (From Table - 29).

This difference in the effectiveness of the three instructional methods is clearly depicted in Figure 12. It is apparent from the plot that trainees in the role-play session showed the greatest learning, while those in the videos cum discussion group showed the least, among the trainees in the three instructional groups. Given that the main effect indicates that there are differences amongst the means for the three groups of trainees trained via different instructional methods, so a post hoc test is a reasonable follow-up in order to know exactly where the differences are.

**TABLE - 30: MAIN EFFECT OF TRAINING METHODS**

Dependent Variable: learning performance

<table>
<thead>
<tr>
<th>Method</th>
<th>Mean</th>
<th>Std. Error</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Lecture</td>
<td>1.670</td>
<td>.210</td>
<td>1.245</td>
</tr>
<tr>
<td>Videos cum discussion</td>
<td>1.175</td>
<td>.234</td>
<td>.702</td>
</tr>
<tr>
<td>Role-play</td>
<td>2.146</td>
<td>.227</td>
<td>1.686</td>
</tr>
</tbody>
</table>
Post hoc test helps to explore the differences among means after a significant F-test with a factor that consists of three or more levels. Fisher’s LSD was conducted to break down the main effect of the three training methods.

### TABLE - 31: LSD POST HOC FOR TRAINING METHODS

<table>
<thead>
<tr>
<th>(I) Method</th>
<th>(J) Method</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Videos cum discussion</td>
<td>.27</td>
<td>.296</td>
<td>.374</td>
<td>-.33,.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Role-play</td>
<td>-.48</td>
<td>.296</td>
<td>.111</td>
<td>-1.08,.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Videos cum discussion</td>
<td>Lecture</td>
<td>-.27</td>
<td>.296</td>
<td>.374</td>
<td>-.87,.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Role-play</td>
<td>-.75*</td>
<td>.309</td>
<td>.020</td>
<td>-1.37,-.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role-play</td>
<td>Lecture</td>
<td>.48</td>
<td>.296</td>
<td>.111</td>
<td>-.12,1.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Videos cum discussion</td>
<td>.75*</td>
<td>.309</td>
<td>.020</td>
<td>.13,1.37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Based on observed means

The error term is Mean Square (Error) = .762.

* The mean difference is significant at the .05 level.

Fisher’s LSD post hoc test (Table - 31) reveals that the mean values of learning performance is very similar for the trainees in the lecture and videos cum discussion group and so there is an insignificant difference in the mean performance scores, $M_{\text{diff}} = 0.27$, 95% CI [-0.33, 1.87], $p = 0.374$ (the confidence interval contains zero indicating that there is no statistically significant difference between the two means).

Similarly, the mean for lecture group is not significantly different from the mean of the role-play group, $M_{\text{diff}} = -0.48$, 95% CI [-1.08, 0.12], $p = 0.111$.

Alternatively, we observe a statistically significant difference between the means for the role-play and videos cum discussion group, $M_{\text{diff}} = 0.75$, 95% CI [0.13, 1.37], $p = 0.020$. Further, on the whole it can be said that the trainees in the role-play group out
performed those in the other two groups, as the mean difference (I-J) is found to be positive ($\text{MD}_{\text{r-p,tec}} = 0.48, p = 0.111$ and $\text{MD}_{\text{r-p,vd}} = 0.75, p = 0.020$) for both the pairs. As such, we conclude that for communication and interpersonal skills training, the role-play methodology may lead to significantly greater performance than videos cum discussion group.

In addition to the above observations, Fisher's LSD reveals that the videos cum discussion approach has been found to be least effective for training employees in interpersonal communication skills, as both the I-J values are negative (see Table - 31, second row) for this pair of comparison ($\text{MD}_{\text{vd-tec}} = -0.27$ and $\text{MD}_{\text{vd-rp}} = -0.75$).

**Post Hoc for learning styles**

Table - 32, reports the mean scores of the trainees with the four learning styles. It can be said that participants with accommodating ($M = 2.311$) style outperformed those with assimilating ($M = 1.250$), diverging ($M = 1.716$), and especially converging style ($M = 1.378$), $F(3, 39) = 3.007, p = 0.042$ (From Table - 35).

This difference in the effectiveness of the three instructional methods is clearly depicted in Figure - 5.13. It is apparent from the plot that trainees with accommodating style showed much greater learning than those with other three styles, specifically converging style. Given that the main effect indicates that there are differences amongst the means for the trainees with the four learning styles, so a post hoc test is a reasonable follow-up in order to know exactly where the differences are.

Post hoc test helps to explore the differences among means after a significant $F$-test with a factor that consists of three or more levels. Fisher's LSD was conducted to break down the main effect of the three training methods.

Fisher's LSD post hoc test (Table - 33) reveals that the mean values of learning performance is very similar for the trainees with accommodating and diverging style, $M_{\text{diff}} = 0.46, 95\% \text{ CI} [-0.22, 1.14], p = 0.177$ (the confidence interval contains zero indicating that there is no significant difference between the two means).

Similarly, the mean for the trainees with diverging and assimilating ($M_{\text{diff}} = 0.32, 95\% \text{ CI} [-0.37, 1.02], p = 0.355$), diverging and converging ($M_{\text{diff}} = 0.47, 95\% \text{ CI} [-0.19,
1.13], \( p = 0.155 \) as well as assimilating and converging (\( M_{\text{diff}} = 0.15, 95\% \text{ CI} [-0.61, 0.91], p = 0.690 \) are insignificant.

**TABLE - 32: MAIN EFFECT OF LEARNING STYLES**

<table>
<thead>
<tr>
<th>Style</th>
<th>Mean</th>
<th>Std. Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accomodator</td>
<td>2.311</td>
<td>.271</td>
<td>1.763</td>
<td>2.859</td>
</tr>
<tr>
<td>Diverger</td>
<td>1.716</td>
<td>.208</td>
<td>1.296</td>
<td>2.136</td>
</tr>
<tr>
<td>Assimilator</td>
<td>1.250</td>
<td>.291</td>
<td>.662</td>
<td>1.838</td>
</tr>
<tr>
<td>Converger</td>
<td>1.378</td>
<td>.258</td>
<td>.857</td>
<td>1.899</td>
</tr>
</tbody>
</table>

Alternatively, we observe a statistically significant difference between the means of the trainees with accommodating and assimilating style (\( M_{\text{diff}} = 0.78, 95\% \text{ CI} [0.01, 1.55], p = 0.047 \) as also accommodating and converging style (\( M_{\text{diff}} = 0.93, 95\% \text{ CI} [0.19, 1.67], p = 0.015 \).

Further, overall it can be said that the trainees with accommodating style tend to show greater learning (and significantly better than assimilating and converging) as the mean difference (I-J) was found to be positive (\( M_{\text{acc-div}} = 0.46, p = 0.177; M_{\text{acc-ass}} = 0.78, p = 0.047 \) and \( M_{\text{acc-cor}} = 0.93, p = 0.015 \)) for all the pairs.

As such, we conclude that for interpersonal communication skills training, the accommodators showed significantly greater performance than trainees with the other three learning styles did.

In addition to the above observations, Fisher’s LSD reveals that the convergers have been found to be least performing in this training, as all the I-J values are negative (see Table - 33, last row) for this pair of comparison (\( M_{\text{conv-acc}} = -0.93, M_{\text{conv-div}} = -0.47 \) and \( M_{\text{conv-ass}} = -0.15 \)).
TABLE - 33: LSD POST HOC FOR LEARNING STYLES

<table>
<thead>
<tr>
<th>(I) Style</th>
<th>(J) Style</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval Lower Bound</th>
<th>95% Confidence Interval Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accomodator</td>
<td>Diverger</td>
<td>.46</td>
<td>.334</td>
<td>.177</td>
<td>-.22</td>
<td>1.14</td>
</tr>
<tr>
<td></td>
<td>Assimilator</td>
<td>.78*</td>
<td>.381</td>
<td>.047</td>
<td>.01</td>
<td>1.55</td>
</tr>
<tr>
<td></td>
<td>Converger</td>
<td>.93*</td>
<td>.364</td>
<td>.015</td>
<td>.19</td>
<td>1.67</td>
</tr>
<tr>
<td>Diverger</td>
<td>Accomodator</td>
<td>-.46</td>
<td>.334</td>
<td>.177</td>
<td>-1.14</td>
<td>.22</td>
</tr>
<tr>
<td></td>
<td>Assimilator</td>
<td>.32</td>
<td>.344</td>
<td>.355</td>
<td>-.37</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>Converger</td>
<td>.47</td>
<td>.325</td>
<td>.155</td>
<td>-.19</td>
<td>1.13</td>
</tr>
<tr>
<td>Assimilator</td>
<td>Accomodator</td>
<td>-.78*</td>
<td>.381</td>
<td>.047</td>
<td>-1.55</td>
<td>-.01</td>
</tr>
<tr>
<td></td>
<td>Diverger</td>
<td>-.32</td>
<td>.344</td>
<td>.355</td>
<td>-1.02</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>Converger</td>
<td>.15</td>
<td>.374</td>
<td>.690</td>
<td>-.61</td>
<td>.91</td>
</tr>
<tr>
<td>Converger</td>
<td>Accomodator</td>
<td>-.93*</td>
<td>.364</td>
<td>.015</td>
<td>-1.67</td>
<td>-.19</td>
</tr>
<tr>
<td></td>
<td>Diverger</td>
<td>-.47</td>
<td>.325</td>
<td>.155</td>
<td>-1.13</td>
<td>.19</td>
</tr>
<tr>
<td></td>
<td>Assimilator</td>
<td>-.15</td>
<td>.374</td>
<td>.690</td>
<td>-.91</td>
<td>.61</td>
</tr>
</tbody>
</table>

Based on observed means.
The error term is Mean Square (Error) = .762.
* The mean difference is significant at the .05 level.

5.5.3 - Relationship between Preferred Mode of Instruction and Learning Style

In order to assess the relationship between the two categorical variables, learning style (according to Kolb's LSI) and the preferred choice of instructional method for acquiring interpersonal communication skills, a chi square test of association was employed. The cross tabulation of the trainees' learning styles as regards to the choice of their preferred instructional method is presented in Table - 34.

The findings in Table - 34, indicate that nearly half of the accommodators tend to prefer to learn through role-play sessions (45.5%). While the trainees with diverging style tend to show equal inclination towards videos cum discussion and role-plays
(33.3 %). Both the accommodators (9.1%) as well as divergers (5.6%) showed least preference for the traditional lectures.

TABLE - 34: CROSS-TAB OF LEARNING STYLE AND CHOICE OF PREFERRED TRAINING METHOD

<table>
<thead>
<tr>
<th>Style</th>
<th>Accommodating</th>
<th>Count</th>
<th>Role-play</th>
<th>Blended learning</th>
<th>Discussion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>% within Style</td>
<td></td>
<td>9.1%</td>
<td>45.5%</td>
<td>18.2%</td>
<td>27.3%</td>
<td></td>
</tr>
<tr>
<td>Diverging</td>
<td></td>
<td>1</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>% within Style</td>
<td></td>
<td>5.6%</td>
<td>33.3%</td>
<td>27.8%</td>
<td>33.3%</td>
<td></td>
</tr>
<tr>
<td>Assimilating</td>
<td></td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>% within Style</td>
<td></td>
<td>60.0%</td>
<td>20.0%</td>
<td>20.0%</td>
<td>.0%</td>
<td></td>
</tr>
<tr>
<td>Converging</td>
<td></td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>% within Style</td>
<td></td>
<td>25.0%</td>
<td>8.3%</td>
<td>58.3%</td>
<td>8.3%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>11</td>
<td>14</td>
<td>16</td>
<td>10</td>
<td>51</td>
</tr>
<tr>
<td>% within Style</td>
<td></td>
<td>21.6%</td>
<td>27.5%</td>
<td>31.4%</td>
<td>19.6%</td>
<td></td>
</tr>
</tbody>
</table>

Amongst the total ten assimilating style trainees, almost 60% of the trainees preferred the traditional chalk and talk mode over the other three methodologies, and none seemed to favour the interactive videos cum discussion approach to training. The blended approach was predominantly preferred by the trainees with converging style (approx. 60%) in order to acquire interpersonal communication skills.

Overall, amongst the total of fifty one employees, most of the trainees (≈ 30%) showed preference for the blended methodology for learning interpersonal communication skills.
### TABLE - 35: CHI-SQUARE ANALYSIS OF LEARNING STYLE AND PREFERRED TRAINING METHOD

<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>21.847</td>
<td>9</td>
<td>.009</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>22.564</td>
<td>9</td>
<td>.007</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>1.645</td>
<td>1</td>
<td>.200</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>51</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) 15 cells (93.8\%) have expected count less than 5. The minimum expected count is 1.96.

### FIGURE: 5.15 - PREFERRED METHOD OF LEARNING ACCORDING TO LEARNING STYLE

![Bar Chart](chart.png)

Figure - 5.15 illustrates these findings in graphical format to get a better picture of the distribution of preferences of particular instructional methods by trainees with particular learning styles to acquire skills for effective interpersonal communication.
Table - 35 presents the chi-square test of association, which was used to gauge the relationship between an individual's learning style and preference for a particular instructional methodology.

The results reveal a statistically significant relationship between the two variables of interest ($\chi^2 = 21.847, p = 0.009; p < 0.05$). Since the $p$-value of 0.009 for the chi-square test of association is less than 0.05, so we reject the null hypotheses, $H_{0}$. Consequently, there is sufficient evidence to conclude that there is an affiliation between one's learning style and how one prefers to be trained.

5.6 - SUMMARY

This section of the study deals with the summarization of the findings of the three case studies. Each of the five research questions have been summarized separately.

The first proposition was concerned with the improvement in the performance scores of the trainees because of the training undertaken. A paired sample t-test revealed a strongly significant difference between the pre-test and post-test scores of the trainees in all the three studies, irrespective of the instructional methods adopted for imparting training. Therefore, the null hypothesis, $H_{0}$ was rejected in favour of $H_{1}$ and it was concluded that there was a significant improvement in the performance scores of trainees after training intervention.

A $3\times4$ ANOVA was employed to gauge the answers to the research questions from second to fourth.

Research question two dealt with the differences in the learning performance of trainees in the different groups who were trained through different instructional methods (lecture, videos cum discussion and role-plays). Only one (case study- III) of the three case studies revealed a significant difference in the performance of the trainees in different groups. Howsoever in this case study also, it was observed that only role-plays were significantly more effective than video cum discussion approach ($p = 0.020$), while there was no significant difference between role-plays and lecture ($p = 0.111$) as well as lecture and videos cum discussion mode ($p = 0.374$).
Consequently, the null hypothesis, $H_{20}$ is not rejected, and it was concluded that different instructional methods may at times result in differences in the learning performance of the trainees, but in most cases such differences are not significantly evident. Manochehr (2006), Brittan-Powell, Legum and Taylor (2008), Donkor (2010) and Liang (2012) are some of the researchers who agree that irrespective of the instructional methodology adopted to impart training, individuals learn more or less equally well in all environments if the training is designed with appropriate level of interaction.

The third research question was concerned with the influence of learning styles of individuals (according to Kolb’s LSI) on the learning performance of training. In all the three case studies we found a significant difference in the learning scores with regards to learning styles. Thus, the null hypothesis $H_{30}$ was rejected with satisfactory evidence to support the notion that individual learning styles have an influence on the performance of the trainees. This study further supports the similar findings by Manochehr (2006), Abidin et al. (2011) and Damavandi (2011). Furthermore, in each of the three case studies a unanimous outcome was that the accommodators performed exceptionally and significantly better than the convergers.

The fourth research question was directed at investigating the combined effect of both training methods as also individual learning styles on learning performance. From the results of the three case studies, it may be concluded that there is enough evidence that this study too supports the findings of previous researchers (Manochehr, 2006; McCann, 2006; Brittan-Powell, Legum & Taylor, 2008; Liang, 2012) that there exists no interaction between the two on learning performance scores. Thus, with sufficient evidence, hypothesis $H_{40}$ fails to be rejected.

The last research question asked trainees of their preference for particular instructional methodologies, and assessed its relationship with respect to their learning styles. A chi-square test of association in all the three studies revealed a significant association between an individual’s learning style and preference for a particular methodology. Therefore, with sufficient evidence the null hypothesis, $H_{50}$ may be rejected.
This finding is consistent with the results of the several previous researches (Buch & Bartley, 2002; Cassidy, 2004; Alfonseca et al., 2006; Davis, 2006; Kohl & Kohl, 2006, as cited in Tyberg, 2012; Pallapu, 2007; Wong et al., 2010). Besides, it was also observed that trainees with assimilating style tend to favour lecture methodology, the converging preferred the blended approach, the accommodating showed inclination towards role-plays while the diverging showed preference for the discussion along with videos.

This chapter provided a detailed scrutiny of the findings of the analysis and answers to the research questions. The next chapter will discuss these findings with respect to the relevant literature presented in the literature review and suggest future research efforts.
DISCUSSION AND CONCLUSIONS

INTRODUCTION
RESULTS OF HYPOTHESIS TESTING
DISCUSSION
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IMPLICATIONS OF THE STUDY
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SUMMARY
6.1 - INTRODUCTION

The final chapter of this thesis presents a brief review of the purpose of the study, the research questions and hypotheses, summary the findings, discussion of implications of the results along with the limitations of the study and suggests opportunities for future research and recommendations. It provides a capsule summary of what the thesis intended to accomplish and the processes undertaken to obtain the requisite results.

The study comprised of three case studies, which were studied to assess the association between training methodologies (lecture, videos cum discussion and role-plays) and learning styles (according to Kolb’s LSI) in relation to the learning performances of the trainees.

The paired samples t-test was employed to check the improvement in the learning of trainees after the training intervention. In addition, a full factorial ANOVA was performed to see if a particular instructional methodology and learning style could predict improved learning performance (knowledge acquisition) from the training. Knowledge acquisition was used as a proxy for learning performance that was derived from a twenty one-item questionnaire.

Moreover, the learning styles of the participants were compared using a three (lecture, role-play, blended learning and videos cum discussion) × four (converger, diverger, accommodator and assimilator) chi-square test of association with a significant level set at 0.05 for any inclination towards a particular mode of instruction. As such, the paired samples t-test, two-way ANOVA and chi-square test of association were executed to answer the five research questions.

6.2 - RESULTS OF HYPOTHESIS TESTING

This section of the study sums up the results of the findings derived for each of the three case studies according to the five hypotheses that were framed to find answers to the research questions. A detailed description of the findings from the three cases for each of these five hypotheses is presented in this segment.
Hypothesis #1: Learning Performance of trainees and Improvement in post-test scores.

An essential prerequisite of any training programme involves the improvement in the performance of the trainees (Al-Ajouni, Athamneh & Jaradat, 2010), and so training evaluation is an indispensable part of the training process. This study was based on the level -2, the learning stage (acquisition of knowledge or skills) of the Kirkpatrick's model of training evaluation. According to Kirkpatrick (1976), level two of the training evaluation can be used to determine the effectiveness of the training programme.

In a study to assess the effectiveness of health and safety training conducted at the workplace, Eckerman et al. (2004) found that the paired t-test showed a significant improvement from pre-test to post-test with a large (0.8 or above per Cohen) effect size for learning performance ($d = 1.09$). Thus, they concluded that training improved the workers' safety knowledge.

Keeping in view the above observation, the null hypothesis $H_{10}$ stated that there does not exist any difference in the learning performance of trainees between the pre-test and the post-test scores. In all the three case studies the paired samples t-test revealed a significant relationship. Thus the null hypothesis of no difference was rejected and with sufficient evidence it was concluded that after training the trainees showed a significant improvement in their learning performance.

The finding supports the results of the study by Eckerman et al. (2004) as also the meta-analytical study by Arthur et al. (2003). Arthur et al. (2003), in their study of 397 independent data points ($d$s) from 165 sources they ascertained that in comparison with no-training or pre-training states, training had an overall positive effect on performance (mean effect size or $d = 0.62$). Moreover, Davis & Yi (2004) also conducted two experiments with nearly 300 participants using behaviour-modelling training and were able to improve computer skills substantially. A unique aspect of this research was that training was found to affect changes in worker skills through a change in trainees' knowledge.
Bretz & Thompsett (1992) too observed significantly substantial differences in the performance of employees who were trained than those who were part of the no-treatment control group. In yet another study in hospitality sector, Ul Afaq, Yusoff, Khan, Azam, & Thukiman (2011) found a significant relationship between employee training and their resultant performance in accomplishing different tasks thus signifying that those employees who have taken trainings were more capable in performing different task.

Therefore training plays a crucial role in organizational success through enhanced performance of their employees. Alipour, Salehi, & Shahnazav (2009) also found that job training results in improved work quality. Furthermore, Verma & Goyal (2011) from their study on the various training and development practices in Life Insurance Corporation in India, assert that, by providing training, employers support the skill development of their employees which ensures survival in a continually changing and competitive workplace.

**Hypothesis #2: Different training methodologies and Learning Performance of trainees.**

An important aspect of training that has potential effect on the training effectiveness is the type of instructional methodology adopted for imparting training (Knight & Salter, 1985, as cited in Sanders, 2011; Petrakova & Sadana, 2007). Yet, little research has systematically examined the relative merits of various instructional methodologies. Research suggests that the choice of training method has consequences on the degree of learning (Webster & Martocchio, 1993, as cited in Chou, 2001).

Hypothesis, H2o stated that there doesnot exist any difference between the mean learning performances of trainees in the three instructional groups. In two of the three case studies (Case study- I & II), it was found that the instructional methodology did not result in significantly differential learning performance, while only in one case study (Case study- III) there was a significant difference in the learning performance due to different instructional methodology.
However, there was only a single significant relationship, that is, between role-play and videos cum discussion (from a total of nine relationships, that is, three pairs: role play- videos cum discussion, role-play- lecture and lecture-videos cum discussion; in each of the three cases). Therefore, it may be concluded that the performance of trainees in general does not differ with instructional methodology. Consequently, on the whole from the results of 3×4 ANOVA, for the three cases, we fail to the rejection of the null hypothesis H20.

Research too has found that generally in case of employee training, different instructional methodologies do not result in differential learning outcomes. Similar studies conducted by DiPietro (2003) and Bretz & Thompsett (1992) found statistically no significant difference in training outcome due to different training methods.

In yet another study, Pfeifer (2004) compared the effectiveness of two training methods (lecture and online modules) concerning the development of management soft skills, and found that both the methods resulted in comparable knowledge acquisition. Likewise, Rehberg, Diaz, & Middlemas (2009) also state that they found Computer-based CPR training to be as effective as traditional classroom CPR training in terms of knowledge outcomes.

**Hypothesis #3: Different learning styles and Learning Performance of trainees.**

Corno & Snow (1986, as cited in Kumar, Kumar, & Smart, 2004) propose that to a certain extent, the success of learning depends on adapting teaching for individual learning styles. Bostrom, Olfman & Sein (1993) and Pashler, McDaniel, Rohrer, & Bjork (2009) too contend that differences exist in the preferred styles of individuals. Moreover, research has also established that an understanding of the learning style orientation is essential to moderate the effectiveness of instructional methods on trainee learning (Hayes & Allinson, 1993, as cited in Towler & Dipboye, 2003).

A study by Sarabdeen (2013) also confirms that learning styles must be taken into consideration for better learning outcome. Therefore, for effective learning to take place, it is critical to consider the learner’s characteristics (specifically learning style) in the development and delivery of a training programme (Buch & Bartley, 2002).
In all the three case studies, from a full factorial ANOVA, it has been observed that a significant difference exists in the learning performances of the trainees with different learning styles. The hypothesis, $H_{30}$, stated that there does not exist any difference between the mean learning performances of trainees with any of the four learning styles (according to Kolb's Learning Style Inventory). Since, in all the three cases the $p$-value was less than 0.05 at $\alpha = 0.05$ so taken as a whole, the hypothesis $H_{30}$ is rejected and we may conclude that the performance of trainees is dependent on one's style of learning.

In accordance with the findings of the present study, Manochehr (2006), Abidin et al. (2011) and Damavandi, Mahyuddin, Elias, Daud, & Shabani, (2011) are some of the researchers who have recently shown in their studies that learning styles significantly influence learning performance.

Additionally, we have observed that in all three case studies the mean scores for the accommodators are higher than the other three learning styles and (significantly) specifically the convergers. This supports the proposition of Kolb & Fry (1975, as cited in Richmond, & Cummings, 2005) and Kolb (1976) that accommodators are generally found in “action-oriented” jobs such as marketing or sales whereas the convergers prefer to work alone and deal with technical tasks and problems rather than social and interpersonal issues.

_Hypothesis #4: Interaction between Learning style-Training methodology and Learning performance of trainees._

Kumar, Kumar, & Smart (2004) are of the view that an 'understanding of learning styles and the interaction between various instructional methods and learning styles can increase our understanding of the teaching-learning process and help us in enhancing it’. So, an essential concern of the researchers is to find the best match between instructional methodologies and learning preferences in order to improve the learning outcome.

In the field of research, the application of learning styles in education and learning is based on the concept of aptitude-treatment-interaction (ATI) research (Cronbach & Snow, 1977). Studies exploring the domain of learning styles demonstrate that
individuals differ in their learning style and that different instructional methods result in differential outcome (Paul, Bojanczy & Lanphear, 1994, as cited in Damavandi et al., 2011).

Hypothesis $H_{40}$ suggested that there does not exist any difference in the learning performance of trainees in the lecture, videos cum discussion and role-plays, based upon their individual learning style. From a $3 \times 4$ factorial ANOVA we found that in all the three case studies, there was no significant interaction effect on the learning performances of the trainees with respect to different learning styles and different instructional methodologies. Since, in all the three cases the $p$-value was greater than 0.05 at $\alpha = 0.05$ so in general, the hypothesis $H_{40}$ fails to be rejected and we may perhaps conclude that the performance of trainees is independent of the combined effect of methodology and style, that is interaction of the two factors.

This result mimics to a certain extent the findings of Rijamampianina (2010) that when compared to college learners, the relationship between learning style and learning method in case of learners in the workplace will be weaker.


**Hypothesis #5: Learning Style and Preferred Training Delivery Method**

Research suggests that individuals with different learning styles are likely to prefer different training methods (Alfonseca et al., 2006; Davis, 2006; Pallapu, 2007; Saks, Haccoun & Belcourt, 2010; Tie & Umar, 2010). Considering this fact, hypothesis $H_{50}$ stated that one's preference for instructional method is independent of learning style as determined by the Kolb’s Learning Style Inventory (LSI). This hypothesis was tested with chi-square test of association.

In all the three case studies, we observed a significant relationship between learning styles and instructional methods. Therefore, from the results of the chi-square test we can reject the null hypothesis $H_{50}$. Taken as a whole in case of employee training, we
can conclude that there is sufficient evidence to establish that a significant relationship exists between learning style and preferred training delivery method.

Thus, the findings support the popular notion of the several research studies in undergraduate and college population which concur that individuals learn better, when subject matter is presented in a way consistent with their preferred learning style (Kolb, 1984; Fielding, 1994).

In addition to the significant relationship, we also observed that the accommodators preferred role-plays. Motter-Hodgson (1998, as cited in Sarabdeen, 2013) found that accommodators enjoy group works that helps them share their experience with others. In addition, Nilson (2010) too proposed that the accommodators would show preference for role-play instructional methodology.

According to extant literature, the most effective strategies for divergers are small group activities, simulations, group projects, discussions, and case studies (Arthurs, 2007; Druzhinina, 2009). In all the three case studies too, we observed that the trainees with the divergent learning style showed an inclination towards videos cum discussion, involving observation of short videos in small groups along with discussion regarding the same and its implications.

In all the three case studies, the assimilators indicated a penchant for the traditional lecture. As the assimilators, prefer information to be presented in a systematic and organized sequence (Buch & Sena, 2001), so Nilson (2010) in his study advocated that the assimilators tend to prefer lectures as their preferred instructional method.

At the same time, the convergers signified proclivity towards the blended approach, which incorporated a short lecture followed by online modules. Since convergers tend to be risk-averse and prefer to learn in a trial-and-error environment that allows them to “fail safely” (Felder, 1996). Therefore, they generally indicate a penchant for computer-based training over other delivery modes (Buch & Bartley, 2002).

6.3 - DISCUSSION

With the increasing pace of technological advancement and the intensifying influence of globalization at the workplace, organizations today are facing intense competition
from around the world. Besides, studies have found that the half-life of knowledge in today’s organizations is decreasing. To survive in the contemporary global environment, learning has been regarded as one of the most promising solutions that can strategically address performance issues at the individual, group, and organizational level (Poell, Pluijm, & Krogt, 2003). Moreover, since employees are the primary source of learning and change, organizations need to understand how adults learn and develop for building a knowledge-based organization (Hurley, 2002).

Given that, training serves as the catalyst to achieve an organization’s strategic objective (Noe, 2010) and well-trained workforce is essential in maintaining an organization’s competitive advantage (Huang, 2001); therefore in order to compete, organizations need to develop their own repertoire of skills (Anis et al., 2011) by offering training and development programs on a regular basis (Barton & Delbridge, 2001).

Besides Subramanian, Sinha & Gupta (2012) from their research findings, suggest that training is strategically imperative and is beyond doubt, the greatest investment and must hence be utilized wisely. Consequently, training is essential for sustainable competitive advantage and a necessity for survival in the 21st century as it provides employees with specific skills or help them to correct deficiencies in their performance (Poh, 2001, as cited in Hamidun, 2009), thereby leading to organization’s successful performance.

The findings of this study offer an insight and present an important facet of training and development. Major themes have emerged from the research data for the implementation of a training programme. The most essential finding from this research was the improvement in the training outcome because of the training intervention.

In a study by AL-Ajlouni, Athamneh & Jaradat (2010), they state that the fundamental purpose of any training programme is to improve the performance, that is, to assess whether the training program has been able to achieve the change that was desired from it. The present study was based on the level -2, the learning stage (acquisition of knowledge or skills) of the Kirkpatrick’s model of training evaluation.
According to Kirkpatrick (1976), the level two of the training evaluation can be used to determine the effectiveness of the training programme. He described that evaluation at this level measures the extent to which participants change attitudes, improve knowledge, and/or increase skills after attending the training program. Changes in one or more of these aspects (depending on the objectives of the training programme) will eventually lead to an improvement in the performance of the employees.

Studies have indicated that learning can be defined in terms of knowledge acquisition that takes place in training (Noe, 1986) and knowledge acquisition is both a short-term result of training and a fundamental prerequisite for successful transfer to workplace (Kraiger et al., 1993; Tracey et al., 2001). At the same time, as training is a formal and systematic modification of behaviour through learning which occurs as a result of education, instruction, development and planned experience (Armstrong, 2000, as cited in Ul Afaq, Yusoff, Khan, Azam, & Thukiman, 2011).

Therefore, learning is positively related to improved performance (Noe & Schmitt, 1986; Alliger & Janak, 1989) and supports the contention that training has a direct relationship with the employees' performance (Ul Afaq et al., 2011). In this study, the trainees took the assessment before the training (pre-test) and after the training (post-test) in order to determine the amount of learning that had occurred. Based on the second level (Learning) of Kirkpatrick's Evaluation Model, a paired samples t-test on the pre-test and post-test scores measured the learning and improvement in knowledge and skills of the trainees.

The results revealed a significant improvement in the learning performance (here, knowledge acquisition) of the trainees after the training. That is, training leads to significant increase in the knowledge of trainees was accepted. The finding supports the meta-analytical research by Collins & Holton III (2004) on the benefits of managerial leadership development programs which including 83 studies published between 1982 and 2001. They found that mean $d_s$ (comparing training with no training) ranged from 0.96 to 1.37 for knowledge outcomes.

In an ergonomics training (King, Fisher & Garg, 1997) to examine the effects of three different types of training methods (Lecture, Lectures with ergonomic job redesign and participatory training with ergonomic job redesign) upon employee
knowledge the pre- and post-test measures revealed a significant effect upon knowledge outcome. They further observed significant differences in the learning by trainees in the three instructional groups.

In yet another study by Bretz & Thompsett (1992) on employee training at Kodak, they found that the trained employees performed significantly better than those in a no-treatment control group, howsoever they found no differences between the two training interventions (integrative-learning-based (IL) training and lecture-based training).

In 2007, Petrakova & Sadana proposed from their study that the type of instructional methodology adopted in training employees has possible effects on the effectiveness of training. While Behnke & Ghiselli (2004) believe that, the link that ties the student to the instructional objectives is the proper selection and utilization of an appropriate delivery method. Although several studies have been conducted to investigate the efficiency and effectiveness of the different training methods, results of the studies has been inconsistent as to which instructional method is "optimal" (Salehi et al., 2009).

Each of the several different training methods has their distinct advantages and disadvantages. For instance, in the comparison on the pros and cons of some training methods, Salehi et al. (2009) noted that the traditional face to face delivery method provides an opportunity for practice and feedback (Wexley & Latham 1991; Goldstein, 1993 and Olivero, Bane, & Kopelman, 1997), at the same time it is considered to be an inefficient (Schmeeckle, 2003) delivery method that incurs additional costs (Huang, 1997). With respect to online training, they observed that it is considered to be one of the most efficient and effective (Schmeeckle, 2003) instructional method. They further observed that online training however requires trainees to be computer literate (Huang, 1997) as also be self-motivated (Huang, 1997; Lyons, 1995) in order to complete the training module, as it provides an isolated (Holden & Westfall, 2006) learning experience.

Owing to the technological advances in today's environment, instructional methodologies are experiencing a constant state of flux. This study was undertaken to ascertain whether the different training methodologies disseminate similar or
differential learning performance. In two of the three case studies, there existed an insignificant difference in the learning scores of the trainees, as regards to the different training methods.

However, contrary to these findings of insignificant difference in learning with respect to different methodologies, it was observed that in one of the case studies (case study- III), a significant difference was evident in one of the pairs, that is, role-plays was found to be significantly more effective than video cum discussion approach (while all the other pairs showed an insignificant difference). This observation adds weight to the findings of McCann (2006) who observed a statistically significant difference in the performance of participants in different learning environments (traditional face-to-face instruction, minimally interactive online instruction, and highly interactive, multimedia-rich online instruction).

As has been found in previous literature, feedback and practice are significant factors in the effectiveness of training programs (Goldstein, 1993; Wexley & Latham, 1991 and Wagner, 1998, as cited in Salehi et al., 2009). Since role-play allows trainees to assume roles and act out parts in a realistic setting (Nikendei et al., 2005) along with a debriefing session (following the act) that encourages active participation and feedback (Read & Kleiner, 1996), consequently role-plays create a resemblance to the real world scenarios, which makes them motivating (King et al., 2001). Besides, it has been found that role-play also provides an excellent platform for the participating trainees to practice team interaction and develop empathy skills (Sanders, 2011), that is why it is one of the most suitable methods for communication and interpersonal skills training. Moreover, Saks, Haccoun & Belcourt (2010) concurs that to teach interpersonal skills such as interviewing or negotiations, the most effective methods are behaviour modelling and role-playing.

In accordance with these benefits, we do find a few studies which indicate plausible differences in the learning outcomes with respect to different training methodologies. In a study by Smith-Jentsch et al (1996), they found that role-playing with performance feedback was superior to a lecture only or lecture with demonstration format for training assertiveness skills. Most often business and industry have found that interactive learning is comparatively more economical than lectures for teaching specialized skills (Moad, 1994). Despite the fact that lectures are not perceived to be
effective instructional methodology for knowledge acquisition and transfer (Piskurich, 2000, as cited in Sinniah, 2008), a survey by American Society for Training and Development (2003) found that approximately 60% of the training in the Fortune 500 organizations is still being delivered through the traditional lectures (Sinniah, 2008).

One reason for our observation of insignificant differences in the former two case studies may be due to the reason that the trainees were freshers (newly recruited employees) in both these cases. They tend to possess a strong desire to learn to excel and may have resulted in equivalent performances across different training methodologies. Also from the total of nine relationships, that is, three pairs: role play-videos cum discussion, role-play-lecture and lecture-videos cum discussion; in each of the three cases, only one pair showed a significant relationship, so on the whole it may be concluded that the performance of trainees in general does not differ with instructional methodology. That is, different training methodologies result in almost equivalent learning performances.

Literature too supports this finding of similar learning performance across different delivery methods, with regards to teaching students in schools, undergraduate as well as post graduate stages (Aragon, Johnson, & Shaik 2002; Brittan-Powell, Legum & Taylor, 2008; Daniel, Price & Merrifield, 2002, as cited in Yilmaz-Soylu & Akkoyunlu, 2009; Donkor, 2010; Gururajan, 2001; Liang, 2012; Manochehr, 2006; Neuhauser, 2002; Pang, 2009; Rebberg et al., 2009; Tie & Umar, 2010). The finding from the present study is also consistent with the literature on employee training that deems parallel learning outcomes, irrespective of the instructional methodology adopted to impart training (Behnke & Ghiselli, 2004; Bretz & Thompsett, 1992; DiPietro, 2004; Pang, 2009; Pfeifer, 2004).

Moreover, the meta analysis by Burke & Day (1986) of the different training methods and their effect on the utility and performance of trainees, it was found that the different training methods result in differential learning outcomes, but not to the point of being statistically significant. In a study on the effects of three alternative managerial training methods (traditional classroom training, computer-based interactive media training, and on-the-job training) on business outcomes in a fast food restaurant chain, DiPietro (2004) found statistically no significant differences in training outcome between different training methods.
Moreover Petty, Lim & Zulauf (2007) in their study on full-time employees of a branch mill of a paper-production company revealed that different training delivery methods (traditional classroom learners and CD-ROM-based learners) may perhaps not influence the transfer of training. These observations may be summarized in the words of Clark (1983) who wrote that media are “mere vehicles used to deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes change in our nutrition” (p. 445).

As such, the findings of the present study are supported by several existing literature. Thus, these literatures confirm our findings that instructional methodology does not significantly influence learning outcome. Likewise, it was evident from the three cases that the learning performance of the trainees were quite similar in the three groups, be it videos along discussion, the traditional lectures or role-plays. Indeed, with limited studies pertaining to employees in organisations, and mostly on students in schools, undergraduate and postgraduate levels, we find most studies favouring that different instructional method do not necessarily lead to difference in learning outcomes in employee training.

With the literature providing a mixed opinion on the “optimal” training methodology, the findings of this study lead to the conclusion that appropriate level of interaction during training along with examples could make any method effective, interesting as well as more “real”, and accordingly result in similar learning outcomes. As in all the three methods (lectures with feedback, videos cum discussion and role-play) adopted in the present study involved interactions as well as active participation of the trainees.

So the picture that has evolved exemplifies adult learning theory which suggests that people retain information best when they are actively involved in problem-solving and learning. This further reinforces the writing of Eduard Lindeman (in 1940s) who proposed that adults learn best when they are actively involved in determining what, how, and when they learn.

In addition to the instructional methodology, a trainees' individual characteristic, their learning style influences the effectiveness of training and results in differential learning in different instructional environments. Furthermore, research has also found
that an understanding of the learning style distribution is essential to improve the quality of instructional strategy (Kohl & Kohl, 2006, as cited in Tyberg, 2012). Moreover, O'Conner (1997) advocates that an individual's learning style has an influence on the learning and achievement of learners. Therefore, for effective learning to take place, it is critical to consider the learner's characteristics in the development, design and delivery of a training programme (Jackson, 1995; Buch & Bartley, 2002).

The effectiveness of the training itself can be improved by applying modern thinking on learning styles and treating course delegates as customers with individual needs (Elliot, Dawson & Edwards, 2009). Kolb's ideas (1984) on learning styles have been introducing new ways of teaching which embrace the learner-centred focus. In line with these, we observed that all the three case studies revealed a significant effect of learning styles on learning performance. This conclusion is borne up by numerous studies and more specifically by Abidin et al. (2011), Chou & Wang (2000), Damavandi (2011) and Manochehr (2006), which illustrated that learning performance yielded a significant main effect for the four learning styles.

Additionally, we have observed that in all three case studies the mean scores for the accommodators are higher than the other three learning styles and (significantly) specifically the convergers. This accentuates the findings that in organizations, accommodators are generally found in "action-oriented" jobs such as marketing or sales and tend to study business administration, marketing & sales fields while attending universities (Kolb, 1973; 1976; Williams, Brown, & Winship, 2013). Besides, they prefer to work with others, are risk takers and enjoy finding out new experiences (Kolb, 1984; 1993; Kolb & Kolb, 2005; Richmond & Cummings, 2005).

In contrast, the convergers tend to specialize in technical and applied sciences such as engineering; as well as prefer to deal with technical tasks and problems rather than social and interpersonal issues (Kolb, 1973; McLeod, 2010; Richmond & Cummings, 2005). Moreover, the convergers are practical by nature and prefer working alone (Kolb, 1984; McLeod, 2010; Schaller, Borun & Allison-Bunnell, 2007).

Additionally, in the present study, learning styles and training methods were chosen to study plausible interaction effects on learning performance. The literature seems to
contain no clear evidence to support the contention of Snow (1989, as cited in Chou & Wang, 2000) that learners differ profoundly in what they do in learning and in their success in any particular learning situation. Nevertheless, research in instructional psychology has demonstrated that adapting instructional methods with teaching strategies (while considering individual differences) results in improved performance (Snow, 1986, as cited in Chou & Wang, 2000). Therefore, we may say that the 'Aptitude Treatment Interaction' (ATI) model is important in this regard.

Aptitude-treatment interaction suggests that a person’s distinctive characteristics or aptitudes (here, learning styles) can be matched to a specific treatment (instructional methods) in order to produce statistically improved outcomes (in this case, significantly improved learning performance) (Snider, 1990). In short, the Aptitude-treatment interaction (ATI) research investigates the effects of learner aptitudes and traits on learning outcomes for different forms of instruction (Berliner & Cahen, 1973; Cronbach & Snow, 1969). Additionally, studies exploring the domain of learning styles demonstrate that individuals differ in their learning style and that no single delivery system is optimal for all.

However, from the three case studies, we found an insignificant interaction effect between the trainees’ learning styles and the three instructional methods. Therefore, the trainees with different learning styles showed comparable performances in different instructional environments. This evidently supports the work of previous researchers like McCann (2006) that it is very difficult to consistently replicate and validate an interaction between a learner’s style and specific instructional methods (Hajizainuddin, 1999, as cited in Manochehr, 2006; Larsen, 1992). This could be attributed to distinct individual variables of the trainee and/or the instructional environment, which are difficult to control.

In addition to the above observations, we noticed some trends that were not significant but distinctly remarkable. Amongst the three instructional methods, role-plays resulted in the most positive effect on the trainees with accommodating style. While the traditional lectures which had profound effect on the performance of the assimilators, was least beneficial for the diverging (amongst the three instructional methodologies).
Contrary to these differential effects, the convergers in this study indicated a more or less similar learning performance in all the three training sessions. This implies that the trainees with different learning styles show some differences in learning performance in different environments. However, it may be that owing to the small sample size the findings were not significant in the case studies. Therefore, a solid relationship could not be established. Nevertheless, considering individual styles in training may perhaps be decisive for attaining exceptional outcomes from any training programme.

As has been well established in literature (Alfonseca et al., 2006; Buch & Bartley, 2002; Cassidy, 2004; Davis, 2006; Gardner & Korth, 1999; Kohl & Kohl, 2006, as cited in Tyberg, 2012; Loo, 2004; Pallapu, 2007; Tie, & Umar, 2010), individuals with particular learning styles have an inclination towards a particular instructional methodology. Furthermore, Mooij (2008) and Tomlinson (2005) suggest that accommodating individual learning differences, including learning style preferences, is an important element in developing and implementing an effective program (as cited by Wilson, 2011). Some trends evolved from the three case studies, which supports the view that a significant relationship exists between an individual’s learning style and their preference for an instructional methodology.

Saks, Haccoun & Belcourt (2010) also contend that trainees with different learning styles are likely to prefer different training methods (e.g. lecture versus role-play) and will differ in terms of the training method that will maximize their learning. Moreover, Fielding (1994), Gardner (1985), Kolb (1984), Slavin (2000), and Woolfolk (1998) are some of the other researchers who concur that individuals learn better, when subject matter is presented in a way consistent with their preferred learning style (as cited by Chen, Toh, & Ismail, 2005).

The results of all the three case studies revealed a unanimous preference pattern. Besides the overall significant relationship between learning style and preferred instructional methodology, it was observed that the accommodators preferred role-plays; the divergers showed inclination towards videos cum discussion; the accommodators indicated a penchant for the traditional lecture while the convergers signified a proclivity towards the blended approach (that incorporates a short lecture followed by online learning).
As found in the present study, McCarthy (1980, as cited in Sarabdeen, 2013) also said that accommodators prefer self-directed learning methods such as role-plays to print and lecture-based learning methods. Besides, Larkin-Hein & Budny (2000) have found that accommodators enjoy interacting with others through group activities and discussions. Nilson (2010) too recommends that the instructional methods most suitable for the accommodators are projects, solving open-ended problems, investigations, simulations, role-plays, and discussions, since they prefer to work with others and enjoy finding out new experiences (Kolb, 1984; 1993; Kolb & Kolb, 2005).

Contrary to the accommodators, the assimilators like accurate, organized delivery of information and desire the information to be presented in a systematic and organized sequence (Blackmoore, 1996 and Buch & Sena, 2001, as cited in Buch & Bartley, 2002). Arthurs (2007, as cited in Tulbure, 2012) demonstrated that assimilators are comfortable with traditional instructional strategies and the results of the present study too correspond with his findings. Moreover, several other previous studies (Akkoynulu & Soylu, 2008; Gardner & Korth, 1999; Larkin-Hein & Budny, 2000; Kolb & Kolb, 2005) have also indicated that in formal learning situations, people with assimilating style favour the traditional lectures.

Individuals with converging style are practical by nature and prefer working alone (Kolb, 1984; Schaller, Borun & Allison-Bunnell, 2007; McLeod, 2010). Additionally, Felder (1996) advocates that in general, the convergers are not risk-takers, and so they choose to learn in a trial-and-error environment that allows them to “fail safely”. Therefore, they generally indicate a penchant for computer-based training over other delivery modes (Buch & Bartley, 2002), where they may enjoy data-based programmes that offer the capacity to conduct tests, which immediately illustrate various scenarios (O’ Conner, 1997). In alignment with these findings, the results of the present study supports that the convergers were found to evidently favour the blended approach that incorporated a short lecture along with online modules.

And finally in case of the divergers, research indicates that these individual’s prefer to work in groups (Schaller et al., 2007; Druzhinina, 2009), have a tendency to seek “out of the box” practice settings and roles (Austin, 2004) as well as like the information to be presented in a detailed, systematic and reasoned manner. For this reason, Arthurs
(2007) and Knowles et al. (2005) proposed that the most effective strategies for divergers are the small group activities, simulations, group projects, discussions, and case studies (as cited by Tulbure, 2012). The present study supports their assertion, as we observed that the divergers showed proclivity towards videos cum discussion, involving observation of short videos in small groups along with discussion regarding the same and its implications.

6.4 - CONCLUSIONS

Forgoing the traditional economic structure, the Indian industry has travelled a long journey and has evolved into a more liberal, modern, technology-based and dynamic system. Additionally, the Indian economy is to witness a surge in the rise of youth population in the very near future. Coupled with the dynamics of globalized workplace, an emerging challenge for the Indian industry is to employ this young populace with a completely different perspective on work and life. With different generations at the workplace, it becomes inevitable for organizations in India to consider newer workplace practices and adopt methods for sound growth of the economy.

In today’s highly global and competitive workplace, employees of the organizations, whether big or small are the key drivers for accomplishing competitive edge in the marketplace. It is an unquestionable fact that competent, proficient, dynamic and skilled employees contribute towards the overall wellbeing of any organization. Realizing the emerging realities of the contemporary workplace, it becomes fundamental for organizations to invest profoundly in their human capital. In fact, now more than ever, in order to remain competitive, organizations must rely on workplace learning and continuous improvement (London & Moore 1999, as cited in Salas & Cannon-Bowers, 2001).

It is interesting to note that research indicates training as a key element of the bundles of practices resulting into high performance work systems with committed and motivated employees. And for contemporary organizations it is vital to build a strongly competent workforce which is the differentiating factor contributing towards organization’s competitive advantage.
In a recent study in the domain of training in India, Subrahmanian (2010) recommends that in the face of continuous technological innovation, higher levels of knowledge and skills and their applications are crucial resources that can only be mobilized through training. Langer & Mehra (2010, as cited in Devi & Shaik, 2012) also emphasises the importance of employee training in view of the fact that with time, skills erode and become obsolete which needs to be replenished.

Mehray & Rao (1999, as cited in Sultan, 2011) in their study accentuate the importance of training and state that with regards to skill deficiencies training not only improves employees’ self-confidence, reduces the amount of supervision but also improves the overall performance of employees. Furthermore, Patel (1946, as cited in Sultan, 2011) has truly endorsed in his study that training is a means of improving human potential and increasing the efficiency of personnel.

Training has been considered to be an essential factor that enhances employee commitment and maximizes employee potential (Lowry, Simon & Kimberley, 2002, as cited in Devi & Shaik, 2012). Vijayasamundeeswari (2013) too contends that the essence of development relies on the quality of human resource which is dependent on several factors, with training being a vital one.

With increasing dynamics at the workplace, it is an ongoing challenge for organizations to equip its employees with essential knowledge, skills and competencies for improving their on-the-job performance to support the eventual success of the organization. As such this research delved into the study of employee training in organizations and assessed the eventual learning performance (gauged on the dimension of the difference in the pre-test and post-test scores) as a consequence of the training being imparted.

The present study considered three case studies with employees of different organizations who were trained in interpersonal communication skills, through different training methods. For the purpose of this study, it was realized that with the advent of flat and tech-driven organizations, it is immensely important for the employees to have efficient interpersonal communication skills.
Additionally with greater emphasis being laid on teamwork, such skills are crucial to inculcate positive work culture and an atmosphere of upbeat team spirit. With great emphasis gearing towards learning, quality relationship becomes a pivotal aspect, which contributes towards better bonding and healthier learning avenues; be it from seniors, juniors or colleagues.

The study indicated that training resulted in overall improvement in the trainees with regards to their learning and improvement in knowledge in the concepts related to interpersonal communication skills essential for effective performance in modern-day workplace. As people are the life blood of organizations, and their continuous learning is a prerequisite for successful organizations, so the findings further supports existing literature that deems training essential for employee learning. Moreover, generally employees’ learn continuously (informal learning) in the organization from their day to day tasks. Provided that, training is the only form of formal learning activity, its success is decisive both for the employees as also the organization.

The past several years have witnessed tremendous growth in the field of research on employee training. With rising expenditure on training, an increasing concern in organizations is that the investment made in training must be justified in terms of improved organizational performance. Although a number of factors have been found to influence employee learning, a prominent training related factor that is essentially considered to justify the expenditures made on training employees is training methodology.

Moreover, with the numerous instructional methods at the disposal of corporate trainers, and the amplifying dilemma over the proper selection of an appropriate methodology, organizations need a delivery method that can help them reduce travelling costs besides enhancing learning and the transfer of training. While research in undergraduate and college setting has generally been suggestive that the efficacy of the various instructional methods is inherently different, however, given the limited research on employee training, contrary observations have emerged.

The results of all the three case studies cement the concept of relatively similar learning performance in different instructional environments in case of employee training. This finding can be attributed to the fact that most of the trainees were newly
recruited employees who possess the strong desire to learn and excel. Being new to an organization, with high energy and boosted morale, people tend to grasp and learn faster. They enjoy being involved and find it appealing to learn, as learning is inherently built as part of their lives that they recently left behind, their college.

Additionally, training tends to be a small part of the formal learning process for employees while most of the learning for them is part of the informal process. So, although training has significant impact on their learning outcomes, howsoever, the different instructional methods seemed to be almost equally effective. Further, this may due to the fact that employees in organizations give move emphasis to learning in the real setting as against the replicate environment. And so, they tend to show nearly similar learning in the varied instructional environments they encounter.

Another significant point that may be highlighted here is that in all the three case studies there was a dominance of accommodators and divergers. This may be due to the basic fact that they are generally found in sales and managerial positions. They tend to involved in active and action-oriented roles. Moreover, with an inquisitive disposition, they enjoy being part of group, acquire novel information and think beyond the horizons. Consequently, their exceptionally flexible approach might be another reason for the virtually similar learning performance that was observed, of the trainees, in the three instructional groups.

With an active nature, one accustoms effortlessly to any situation, and so it becomes much easier to learn and excel. Role-plays and videos along discussion tend to be quite active learning techniques. And learning through lectures has deep roots in our educational system, of which we are very accustomed of. So, the very choice of the methods adopted for comparison may be another possible factor contributing towards the comparable learning performance that we observed.

A further remarkably notable aspect of parallel learning performance can be attributed to the fact that most of the trainees were below 45 years. This age corresponds to learners who have entered the workplace at a time when organizations are placing great value on learning. Where the belief that ‘without learning there is no improvement and without improvement, most organizations stagnate (Lassey, 1998)’ is deeply valued. In this regards, training tends to be the most vital facet. As such,
employees give importance to this formal learning activity, which accentuates their position not only in the organization but also in their personal career growth giving way to superior performance reports.

Consequently, the essence of the findings borne that employees learn quite similar in distinct instructional environments. In this light and reflecting over the incremental expenditure on employee training, organizations may consider adopting only that method that is less expensive. But since, the selection of a particular method cannot rely on a single dimension, so it is essential that other aspects influencing the decision regarding the selection of training method(s) be considered.

Given that, the approach that an employee shows preference for is dependent on how comfortable they feel in that particular environment, which supports their style of learning. So another imperative factor that training practitioners may consider for deciding the most suitable methodology for imparting training and for fruitful learning outcomes, is an individual’s style of learning.

Learning style is a concept that has in recent years grasped the attention of the numerous academicians, researchers and training practitioners in the field of training and developing employees in organizations. This aspect of the human side of training has been reiterated time and again as it is thought to influence the degree of learning. With Kolb’s (1984) experiential learning theory as one of the cornerstone of this study, it has also been observed that individuals with different learning styles indicate differences in learning performance; with the accommodators outperforming the trainees with the other learning styles and most specifically and significantly the convergers.

One reason for such differences may be owing to the fact that the training was on interpersonal communication skills. And as, most of the trainees in case study I and II had accommodating style while those in case study III were mostly divergers. So, the very topic of training complimented with the uniqueness of these two types of learners; who happen to enjoy group interactions and look out for new avenues to explore. Besides, as stated above employees will show preference to learn through methods that are congruent with their learning styles.
So, as an important factor in training, an understanding of learning style will enable trainers to appreciate the diverse learning preferences and be better prepared to cross the learning gaps thereby, providing a more comprehensive training experience. Honigsfeld & Schiering (2004, as cited in Wilson, 2011) also state that incorporating learning styles based instructional strategies will create a comfortable learning environment and promote a love for learning.

Concurrent to the theory of Kolb’s learning style (1984); it has been observed that some trainees had a definite preference for certain instructional method, but not others. Researchers popularly refer to this unique individual preference as learning style. As proposed by the work of Svinicki & Dixon (1999) and Kolb (1984), the predicted preference for instructional methodology in the workplace materialised in reality. These findings are consistent with the general principles of learning styles and the expected preferences of individuals with these styles.

Considering this notable relationship, it is fundamental to consider individual penchant in designing training programmes. Dun, Ingham & Deckinger (1995) concur that besides, improving training outcome if preferences are identified and complementary rather than dissonant training approaches are adopted then the need for re-training and its related costs may be reduced substantially.

Conversely, the study failed to support the important concept of Aptitude Treatment Interaction, whereby it was observed that in case of employee training the combined effect of learning style and instructional methodology resulted in inconsequential outcome. Since Aptitude Treatment Interaction considers that, some instructional treatments are more or less effective for particular individuals depending upon their specific abilities (Kearsley, 2010). And so, there should have been some significant combinations.

In all the three cases, the plots of interaction effect did not show completely insignificant relationship, as the lines were not entirely parallel. But at certain points we observed intersections, which indicate some valuable trends. It has been observed from the plots of interaction effect (in the three case studies) that though not significant, the accommodators performed the best in role-plays and the assimilators predominantly in lectures.
An important aspect for such insignificant observation may be due to the non representative sample according to learning style, that is most of the trainees were accommodators while the representation of the convergers were half of the former. So the three case studies comprised of workforce that were somewhat imbalanced in having a preponderance of accommodators and divergers as compared with assimilators and convergers. As a consequence, the study failed to materialize any significant combination, consequently demanding for further research in this domain.

At the end, it can be said that this study provides a preliminary support to the notion that individuals prefer certain instructional methodology to others. Furthermore, the study contends that an association exists between training methods and learning styles as also their influence on learning performance. While apart from the significant learning style effect, the other relations failed to reach the significance level, though the data are suggestive of certain useful trends that merit further investigation.

These trends posit useful information, of which the most valuable outcome is that trainees indicate preference for certain methods over others, depending on their style of learning. The inclination was apparent; of the accommodators towards role-plays, the assimilators for lectures, the convergers for blended learning and the divergers in favour of videos along discussion. This is indicative of the fact that people tend to hold distinct preferences towards learning. Such an observation clearly cements the foundation of providing training based on learning style and training method preference.

In addition, to the above observations, an interesting revelation is the preference for the blended approach by most of the trainees. A method that incorporated lectures and online modules seemed to magnetize learners and this throws light on another dimension regarding the selection of the most suitable training method. It perhaps indicates that if combinations of methods are adopted, people will tend to show greater proclivity besides improved learning. Moreover, clubbing methods will capture the interests of people with different learning styles orienting them towards superior performance.

For instructional designers, corporate trainers, and organizations, there is clear value in understanding learning styles in order to identify learning difficulties as well as
optimize the efficiency and effectiveness of employee training and development. It further facilitates the trainers to make trainees aware of their own pace and processes of learning thereby helping them to become more effective as autonomous, self-directed, life-long learners.

Therefore, trainers need to consider the different instructional methodologies to reach to each learner, since their reliance on one mode of learning (such as expert driven lectures or reading) may appeal to some learners (i.e. assimilators) but risks disengaging other learners (such as divergers, convergers and accommodators). Besides boosting the confidence and ability of the trainer, an understanding of the different methods enables the trainer to accommodate the varied needs of the different learners thereby making learning both enjoyable as also meaningful, and in the process enhancing the success of the training programme. Consequently, trainees will be more enthusiastic and motivated to learn and practice what they have learned.

6.5 - IMPLICATIONS OF THE STUDY

The study has presented a lucid framework of the relationship between instructional methods and learning styles as well as their interaction on learning performance. The findings of this research have several important implications for employee training and performance improvement. Besides, the results also have much wider implications for corporate training, where on-the-demand training, expenditure and loss of revenue from travel and instruction are most often the determinants for the selection of the appropriate instructional methodology. Thus, the implications exist for all organizations that are involved in providing professional training programmes as also the society at large.

First, the study contributes to the body of literature that stresses the importance of self-directed adult learning, which is today's necessity, owing to the increasing demands and dynamics of workplace. As learning has become a life-long process, an understanding of the learning style of trainees will help the trainers to motivate them to be self-learners in order to combat the ever-increasing need for new skill and knowledge. Research suggests that in formal training environment, the trainers should not act as an expert but a facilitator, since then the trainer is considered to be a resource person and learning ceases ones the training session is completed.
Buch & Bartley (2002) contend that trainees should not be made to adopt a particular style since it would make them intellectually short-sighted and they may tend to avoid the learning environment. Consequently, while training employees, the trainer should act as a facilitator and develop the self-efficacy of employees thereby instilling the desire to learn. In addition, Sarabdeen (2013) found that the development of self-efficacy is possible only when the trainer understands the learning needs and styles of the learners (Zupalska & Brozik, 2006) and are flexible to adapt to the trainees' need (Keengore & Georgina, 2011). Therefore, trainers should create a flexible training structure to accommodate to the needs of the different trainees by incorporating several approaches to facilitate the development of motivation to learn. This will enable the trainers to cross the learning gaps of all the participating trainees.

Second, this research has wide implications for the corporate training departments, which have been emphasizing the need to move beyond the traditional classroom lectures. As studies, indicate that instructors may enhance learning to some extent by engaging employees in instructional methods that fit their learning styles or by incorporating a range of different methods. The findings suggest that the varied instructional methods may be equally effective for trainees of the different learning styles. However, considering the substantial effect of learning styles, it is suggestive that the best approach for the instructor would be to design a flexible structure and incorporate at least two different methodologies to engage the trainees of the different learning styles for an enhanced outcome.

Third, the findings have implications for the design and delivery of workplace training. In order to decide the most appropriate training method, previous training designers primarily relied on course content. This research suggests that it may be valuable to consider individual differences, the learning styles of trainees while deciding the optimal delivery methodology. Besides, such decisions regarding the selection of the appropriate instructional method they should also consider cost effectiveness as also the rate of return in terms of business outcomes.

Fourth, in this era of knowledge, for continuous employee development, it is critical to be armed with the skill of how learning best takes place. Cowley et al. (2002, as cited in Manochehr, 2006) states that an understanding of learning styles will enable one to take requisite measures to adjust to the most suitable way to acquire
knowledge. So, learning style information can be provided to trainees for diagnostic purposes. Moreover, when trainees understand their own learning strengths and weaknesses, they may take steps to adapt even to non-preferred instructional methods.

Fifth, the findings of this study have important implications for training evaluation research and practitioners. In order to draw conclusive results, it is important for training researchers to control for individual learning styles, when evaluating the effectiveness of alternative training methods. While in case of evaluation of training, the training practitioners should be more cautious in reviewing and interpreting trainee's reports. Since trainees with dissimilar learning styles may react distinctly to different instructional methods, so their evaluation reports may reflect differential performance due to learning style differences.

Therefore, training evaluation report should be considered in conjunction with learning style information in order to obtain more conclusive outcome. For instance, a poor overall outcome of training may be because the method adopted to impart training conflicted with the learning style of most of the trainees. And so, the instructional method adopted to impart training must be one that favours the majority of the trainees' learning style.

Employees are an integral part of the society and their behaviours have implicit social implications. Organizations today are more flexible and based on formal and informal networks, making relationships an important dimension of progress both for the individual as well as the organization. The networks facilitate employees to work in a team and for managers these networks are a rich source for knowledge sharing and problem solving capabilities (Sarwar, Azhar, & Akhtar, 2011).

As such providing adequate training to employees serves as a platform for better learning, healthier relationships with others and employee satisfaction resulting in improved performance and organizational profitability. So, in the words of Sarwar, Azhar, & Akhtar (2011) who conclude from their study that 'unstructured training pattern encouraged the employees to have more of formal relations, where, advice and knowledge seeking networks were dominant over friendly networks and structured training pattern stimulated the employees to have more informal relations, where,
friendly networks dominated the formal advice seeking or knowledge sharing networks'.

In conclusion, HRD practitioners can use these indicators to develop instructional strategies for designing and delivering more effective training programmes. While learning style is an important dimension, it is not the sole factor for designing effective training strategies. Given the existence of other individual difference factors (i.e. locus of control, self-efficacy, etc.), organizations need to investigate which of these factors have maximum influence on the training effectiveness and hence develop training strategies to suit to their unique situations.

A movement in this direction necessitates further training of the HRD professionals themselves, along with a willingness of the organizations to invest the necessary resources wherever possible. As such, trainers should be adequately trained in the emerging needs of the corporate world of training, and should be equipped with the essentials of the budding flexi-work culture, the rising disparate generations at work and the concept of individuality in groups.

6.6 - LIMITATIONS OF THE STUDY

As with most research studies, this study too had its limitations. Most of these were related to the inherent nature and the design of the study. The size of the sample in each case study was small as trainees and training centres were mostly reluctant in providing information regarding themselves and training. And so access to information regarding training and trainees was limited. Consequently data was subject to reporting biases of the participants.

Moreover, it was not permissible to witness the training programme, which further reduced the access to direct information which may have had influenced the results of the study. Being an expensive domain, it prevented an in-depth study of the adoption of training methods by particular organizations and their implications. This study also did not investigate differences between the measured variables with respect to respondent’s demographic characteristics (gender, age, educational qualification), as it was beyond the scope of this research. The study is further limited in scope with regards to the nature of the population of the study. The sample considered to be part
of the study was limited to trainees in sales/managerial rank. So, further research is
deemed in this domain for a more accurate generalization of the study.

The study is also limited by the knowledge and skills of the researcher particularly in
statistical area. Research can always be improved, and it is important for scholars
engaged in educational research to evaluate their designs and to acknowledge the
limitations of their studies. As new researchers replicate previous studies, they may
consider these limitations and eliminate them in future.

6.7 - DIRECTIONS FOR FUTURE RESEARCH

Despite the fact that the limitations of the present study influenced the results, they
also provided an important insight into both the content and procedural issues that
need to be considered in further research. This study may prove useful to future
researchers, as comparative analyses amongst industries for additional exploration.

An important recommendation for future research is to explore the effectiveness of
other instructional methods, compare on-the-job with off-the-job training as also
cognitive versus behavioural training methods. Moreover, with the technological
advances, and the use of modern media in schools and colleges, it may be that newer
modes may become more effective in times to come. Consequently, another
interesting direction for future research is to continue to monitor the preferred
instructional methods for adult learners in the workplace.

As has been observed in the present study that the learning styles have substantial
influence on the preference for an instructional approach, so an interesting direction
for future research is to incorporate the ‘matching hypothesis’ and study the
differences in learning performance by providing training to individual’s of a
particular learning style in their preferred learning environment. Such studies may
include a greater number of employees and may possibly assign equal number of
trainees of a particular learning style in their preferred learning environment. An
investigation of this nature would reveal substantial results as to whether imparting
training custom-designed per learning style is truly effective instead of just being
preferred.

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Likewise, in the present research, the trainees with different learning styles have shown differential learning performance. Moreover, considering the predominance of accommodators and divergers in the three case studies, it may be interesting to undertake further research in order to determine the preponderant learning styles in different industries.

Lastly, a recommendation for future research includes longitudinal studies and analyses conducted with greater sample size to effectively validate and generalize the results. Researchers may seek to investigate the influence of demographic, cultural and other individual variables on both preferences for a particular instructional method, learning style and learning performance. In addition, similar case study investigations could include additional levels of evaluation to observe the effect on transfer of training or return on investment levels with respect to various instructional methodologies and learning styles. Studies of this nature would provide valuable insight to organizations and HRD practitioners.

6.8 - SUMMARY

In retrospect, this chapter presented the conclusions drawn from the framework of the study, the literature of Buch & Bartley (2002), Brookfield (1986), Knowles (1984), and Kolb (1984) and addressed the proposed research question. The section on discussion specifically addressed the hypotheses that analyzed the improvement in learning after training as well as the preferred instructional methodology for the trainees of the four learning styles.

Besides, the relationship between instructional methods and learning performance; learning style and learning performance; and the interaction between the former two on the latter have also been discussed in detail. Post discussion a brief conclusion that has been drawn from the study is presented in section – 6.4. Section – 6.5 describes the managerial and social implications of the research in the field of training and performance improvement of employees.

Finally, towards the end of the chapter the limitations of the study along with the recommendations for future research have been highlighted.


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APPENDICES
APPENDIX - A (PRE TEST)
Knowledge assessment (Interpersonal communication skills training)

Please answer each of the following questions to the best of your knowledge. Kindly select only ONE response for each.

Identification code:............

1. In the communication process, which of the following is not a primary component of the communication process but ensures that the message is clear and understood?
   a. Feedback
   b. Channel
   c. Receiver
   d. Sender

2. Which one of the following is not part of the communication process?
   a. Encoding
   b. Channel
   c. Feedback
   d. Recoding

3. The characteristic of effective interpersonal communication:
   a. Emphasizing on one’s own ideas
   b. Backbiting of a third person with the partner
   c. Praising the good performance and giving courage
   d. Greeting the person after he has greeted you

4. Imagine a situation in which clerical workers communicate with their supervisors and supervisors decide what information should be passed up to the next level of management. This type of communication is characteristic of:
   a. The ‘new’ workplace
   b. A distributed workplace
   c. An offsite workplace
   d. A command-and-control workplace

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5. A memo drafted by the supervisor(s) of a department is sent to all employees of the department. This is a type of
   a. Intrapersonal communication
   b. Dyadic communication
   c. Small-group communication
   d. Public communication

6. Match the words in Column B to their best definition in Column A-

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Making eye contact</td>
<td>1. Nervousness</td>
</tr>
<tr>
<td>ii. Rubbing nose</td>
<td>2. Defensive</td>
</tr>
<tr>
<td>iii. To put oneself in others shoes</td>
<td>3. Paying attention</td>
</tr>
<tr>
<td>iv. Giving others space to express</td>
<td>4. Empathy</td>
</tr>
<tr>
<td>v. Crossing arms</td>
<td>5. Listening</td>
</tr>
</tbody>
</table>

a. i-4, ii-2, iii-3, iv-1, v-5
b. i-3, ii-1, iii-4, iv-5, v-2
c. i-3, ii-2, iii-1, iv-4, v-5
d. i-5, ii-1, iii-4, iv-3, v-2

7. A good listener will periodically ask__________________ to check that he or
she has understood the speaker’s intended meaning.
   a. for a short break
   b. to consult his or her notes
   c. clarifying questions
   d. for time

8. The _________________ of a verbal exchange can make a greater impression than
the words used.
   a. decibel level
   b. frequency and pitch
   c. word rhythm
   d. volume and tone
9. Which of the following has been shown to reduce the frequency with which coworkers communicate?
   a. Gender differences
   b. Background noise
   c. Frequent deadlines
   d. The physical distance between them

10. Which of the following is NOT one of the characteristics of good interaction?
    a. Politeness
    b. Promptness
    c. Professionalism
    d. All of these are characteristics of good interactions

11. The majority of what is communicated during face-to-face meetings is conveyed by
    a. word choices
    b. body language
    c. verbal tone
    d. clothing

12. Which of the following is an example of body language?
    a. The way one is standing or sitting
    b. Gestures with their arms or hands
    c. Breathing rate
    d. Eye contact (or lack of it)
    e. a, b and e
    f. All of the above

13. To arrive at a fair solution to a problem, one should first:
    a. defend oneself
    b. ask questions to understand and confirm the nature of the problem
    c. listen to the description of the problem
    d. determine and implement a solution to the problem
14. Which of the following best describes a communication barrier?
   a. Multitasking
   b. Something that keeps us from fully understanding others
   c. Interruptions
   d. Job description

15. One of the reasons that change is a challenge to effective workplace communication is that:
   a. operating manuals must be rewritten.
   b. people must learn how to communicate with new co-workers.
   c. consensus must be achieved.
   d. change makes people uncomfortable.

16. Ineffective communication occurs when:
   a. the speaker shifts body position frequently.
   b. people from different cultures work together.
   c. the meaning is not understood.
   d. listeners fail to take notes.

17. Emperor Frederick, the 13th century ruler of the Holy Roman Empire wanted to know what language had been spoken at the birth of mankind in the Garden of Eden. Was it Hebrew, Greek or Latin? He ordered an experiment in which the original circumstances would be recreated as closely as possible. A group of infants were to be isolated from hearing human speech from the moment of birth until they spoke their language. The babies were to be raised by nurses who were strictly charged to maintain complete silence when with the babies. The result? Every one of the babies died (Adapted from Robert Bolton, People Skills).

The possible reason for such lethal consequence is the absence of:

   a. Noise
   b. Voice
   c. Communication
   d. Sound
18. Judge the best match?

<table>
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</tbody>
</table>
19. Which one of the following is the best explanation of noise for purposes of interpersonal communication?
   a. Anything that interferes with the interpretation of a message
   b. A sound that interferes with communication
   c. Any type of sound that can be heard during the transmission of a message
   d. Any physical interruption to a communication

20. An important aspect of interpersonal communication is non-verbal communication, which encompasses facial expressions and body language. Tick the most appropriate combination of descriptive word for each of these pictures:

   a. Interrupter, sociable, impulsive, indecisive
   b. Interrupter, impulsive, sociable, indecisive
   c. Sociable, interrupter, impulsive, indecisive
   d. Sociable, impulsive, interrupter, indecisive
21. Sometimes one does not know exactly what someone really wants and they tend to give a lot of information.

What aspect of communication is crucial in helping cater to the need(s) of the other person?

These pictures may help suggest you the correct answer.

- a. Feedback
- b. Passive Listening
- c. Paraphrasing
- d. Active Listening

*Thank you for your Cooperation!*
APPENDIX – A (POST TEST)
Knowledge assessment (Interpersonal communication skills training)

Please answer each of the following questions to the best of your knowledge. Kindly select only ONE response for each.

Identification code: ..........

1. In the communication process, which of the following is not a primary component of the communication process but ensures that the message is clear and understood?
   a. Feedback
   b. Channel
   c. Receiver
   d. Sender

2. An effective interpersonal communication is characterized by:
   a. Emphasizing on one’s own ideas
   b. Backbiting of a third person with the partner
   c. Praising the good performance and giving courage
   d. Greeting the person after he has greeted you

3. A supervisor(s) drafts and sends a memo to all employees of the department. This is a type of
   a. Intrapersonal communication
   b. Interpersonal communication
   c. Small-group communication
   d. Public communication

4. ......................... is not part of the communication process.
   a. Encoding
   b. Channel
   c. Feedback
   d. Recoding
5. Imagine a situation in which clerical workers communicate with their supervisors and supervisors decide what information should be passed up to the next level of management. This type of communication is characteristic of:
   a. The ‘new’ workplace
   b. A distributed workplace
   c. An offsite workplace
   d. A command-and-control workplace

6. A good listener will periodically ask clarifying questions __________________
   a. for a short break
   b. to consult his or her notes
   c. to check that he or she has understood the speaker’s intended meaning.
   d. for time

7. Match the words in Column B to their best definition in Column A-

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Making eye contact</td>
<td>1. Nervousness</td>
</tr>
<tr>
<td>ii. Rubbing nose</td>
<td>2. Defensive</td>
</tr>
<tr>
<td>iii. To put oneself in others shoes</td>
<td>3. Paying attention</td>
</tr>
<tr>
<td>iv. Giving others space to express</td>
<td>4. Empathy</td>
</tr>
<tr>
<td>v. Crossing arms</td>
<td>5. Listening</td>
</tr>
</tbody>
</table>

   a. i-4, ii-2, iii-3, iv-1, v-5
   b. i-3, ii-2, iii-1, iv-4, v-5
   c. i-3, ii-1, iii-4, iv-5, v-2
   d. i-5, ii-1, iii-4, iv-3, v-2

8. ............................................... reduces the frequency with which coworkers communicate?
   a. Gender differences
   b. Background noise
   c. Frequent deadlines
   d. The physical distance between them
9. Emperor Frederick, the 13th century ruler of the Holy Roman Empire wanted to know what language had been spoken at the birth of mankind in the Garden of Eden. Was it Hebrew, Greek or Latin? He ordered an experiment in which the original circumstances would be recreated as closely as possible. A group of infants were to be isolated from hearing human speech from the moment of birth until they spoke their language. The babies were to be raised by nurses who were strictly charged to maintain complete silence when with the babies. The result? Every one of the babies died (Adapted from Robert Bolton, People Skills).

The possible reason for such lethal consequence is the absence of:

a. Noise  
b. Voice  
c. Communication  
d. Sound

10. Which one of the following is the best explanation of noise for purposes of interpersonal communication?

a. Anything that interferes with the interpretation of a message  
b. A sound that interferes with communication  
c. Any type of sound that can be heard during the transmission of a message  
d. Any physical interruption to a communication

11. Which of the following best describes a communication barrier?

a. Multitasking  
b. Something that keeps us from fully understanding others  
c. Interruptions  
d. Job description
12. A majority of what is communicated during face-to-face meetings is conveyed by:
   a. word choices
   b. body language
   c. verbal tone
   d. clothing

13. An important aspect of interpersonal communication is non-verbal communication, which encompasses facial expressions and body language. Tick the most appropriate combination of descriptive word for each of these pictures:

   i.  
   ii.  
   iii. 
   iv. 

   a. Interrupter, sociable, impulsive, indecisive  
   b. Sociable, impulsive, interpreter, indecisive  
   c. Sociable, interrupter, impulsive, indecisive  
   d. Sociable, indecisive, interrupter, impulsive

14. Which of the following is NOT one of the characteristics of good interaction?
   a. Politeness  
   b. Promptness  
   c. Professionalism  
   d. All of these are characteristics of good interactions
15. Judge the best match?

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<td>d.</td>
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</table>
16. Sometimes one does not know exactly what someone really wants and they tend to give a lot of information.

What aspect of communication is crucial in helping cater to the need(s) of the other person?

These pictures may help suggest you the correct answer.

a. Opinion
b. Passive Listening
c. Paraphrasing
d. Active Listening

17. To arrive at a fair solution to a problem, one should first:

a. defend oneself
b. ask questions to understand and confirm the nature of the problem
c. listen to the description of the problem
d. determine and implement a solution to the problem
18. Which of the following is not an example of body language?
   a. The way one is standing or sitting
   b. Gestures with their arms or hands
   c. Breathing rate
   d. Eye contact (or lack of it)
   e. None of the above
   f. All of the above

19. Ineffective communication occurs when:
   a. the speaker shifts body position frequently.
   b. people from different cultures work together.
   c. the meaning is not understood.
   d. listeners fail to take notes.

20. A better impression can be made through proper......................... of a verbal exchange.
   a. decibel level
   b. frequency and pitch
   c. word rhythm
   d. volume and tone

21. A reason that change becomes a challenge to effective workplace communication is.........................
   a. operating manuals must be rewritten.
   b. c. consensus must be achieved.
   c. change makes people uncomfortable.
   d. people must learn how to communicate with new co-workers.

Thank you for your Cooperation!
<table>
<thead>
<tr>
<th>QUESTION NUMBER</th>
<th>PRE-TEST</th>
<th>POST-TEST</th>
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<tbody>
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<td>1</td>
<td>A</td>
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<tr>
<td>21</td>
<td>D</td>
<td>D</td>
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</tbody>
</table>
APPENDIX - B  (PART - 1)
KOLB LEARNING STYLE INVENTORY – VERSION 3.1
The Learning-Style Inventory describes the way you learn and how you deal with ideas and day-to-day situations in your life. Below are 12 sentences with a choice of endings. Rank the endings for each sentence according to how well you think each one fits with how you would go about learning something. Try to recall some recent situations where you had to learn something new. Be sure to rank ALL the endings for each sentence unit.

PLEASE DO NOT MAKE TIES!
Remember: 4 = most like you, 3 = second most like you, 2 = third most like you, 1 = least like you

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<tr>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>When I learn…</td>
<td>...I like to deal with my feelings</td>
<td>...I like to watch and listen</td>
<td>...I like to think about ideas</td>
</tr>
<tr>
<td>2.</td>
<td>I learn best when…</td>
<td>...I trust my hunches and feelings</td>
<td>...I listen carefully and watch</td>
<td>...I rely on logical thinking</td>
</tr>
<tr>
<td>3.</td>
<td>When I am learning</td>
<td>...I have strong feelings and reactions</td>
<td>...I am quiet and reserved</td>
<td>...I tend to reason things out</td>
</tr>
<tr>
<td>4.</td>
<td>I learn by…</td>
<td>...feeling</td>
<td>...watching</td>
<td>...thinking</td>
</tr>
<tr>
<td>5.</td>
<td>When I learn…</td>
<td>...I am open to new experiences</td>
<td>...I look at all sides of an issue</td>
<td>...I like to analyze things, break them into their parts</td>
</tr>
</tbody>
</table>

238
<table>
<thead>
<tr>
<th></th>
<th>When I am learning...</th>
<th>...I am an intuitive person</th>
<th>...I am an observant person</th>
<th>...I am a logical person</th>
<th>...I am an active person</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>I learn best from...</td>
<td>...personal relationships</td>
<td>...observation</td>
<td>...rational theories</td>
<td>...a chance to try and practice</td>
</tr>
<tr>
<td>8</td>
<td>When I learn...</td>
<td>...I feel personally involved</td>
<td>...I take my time before acting</td>
<td>...I like ideas and theories</td>
<td>...I like to see results from my work</td>
</tr>
<tr>
<td>9</td>
<td>I learn best when...</td>
<td>...I rely on my feelings</td>
<td>...I rely on my observations</td>
<td>...I rely on my ideas</td>
<td>...I can try things out for myself</td>
</tr>
<tr>
<td>10</td>
<td>When I am learning...</td>
<td>...I am an accepting person</td>
<td>...I am a reserved person</td>
<td>...I am a rational person</td>
<td>...I am a responsible person</td>
</tr>
<tr>
<td>11</td>
<td>When I learn...</td>
<td>...I get involved</td>
<td>...I like to observe</td>
<td>...I evaluate things</td>
<td>...I like to be active</td>
</tr>
<tr>
<td>12</td>
<td>I learn best when...</td>
<td>...I am receptive and open-minded</td>
<td>...I am careful</td>
<td>...I analize ideas</td>
<td>...I am practical</td>
</tr>
<tr>
<td>13</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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APPENDIX — B (PART - 2)

DEMOGRAPHIC INFORMATION

1. Your gender?
   □ Male
   □ Female

2. Age?
   □ Less than 30
   □ 30-45
   □ 45+

3. The highest level of education completed?
   □ High school
   □ Bachelor’s
   □ Master’s
   □ Doctoral

4. Which mode of training do you prefer the most?
   □ Lecture
   □ Role-play
   □ Blended learning
   □ Videos along discussion

Thank you for your participation!
Instructional Methods: Relative Effectiveness and Preference of Indian Trainers

Rizwana Khatun*

ABSTRACT
This study was undertaken to assess how trainers perceive the relative effectiveness of nine alternate training methods for achieving six training objectives. The nine methods were case-study, lecture, one-to-one training, role play, business games, simulations, programmed instruction, computer-based training (CBT) and sensitivity training. The six training objectives considered were knowledge acquisition, attitude change, problem solving, interpersonal skill development, participant acceptance and knowledge retention. Responses were obtained from 217 training managers through an online questionnaire who were part of the top 500 Indian companies (as per the ETS00 list, 2012). The analysis revealed that one-to-one method reported as the most frequently used method was relatively less effective in attaining all the six training objectives. While lectures were preferred in attaining all training objectives, except interpersonal skill development where sensitivity training was preferred the most. Implications of the study have been discussed in this paper.

Keywords: Training Methods, Training Objectives, Relative Effectiveness, Indian

INTRODUCTION
The world today is complex and the future unpredictable. Today's worker finds himself in a world that is changing at an incredible pace. The rhythm of change is so fast that the basic training given is not sufficient to respond to all the present and future needs. The Indian economy too is in transition and a radical change has set in the industry. Business cries out for a new yardstick. The concepts, scope and methodologies of employee training have undergone many changes with learning as the only way to succeed in this knowledge-driven era. Human resource has become a source of competitive advantage for all organisations, and the training structure has changed to create a smarter workforce and yield the best results.

Just as a white elephant brings no benefit to its owner except expenses, a training programme too strains the balance sheet if no transfer of training takes place. This calls for designing training programmes that lead to an improvement in performance. The Pareto principle states that 20% of the input creates 80% of the result. The key here is that, 'everything is not weighted equally'. A unit of work done does not yield an equal result from that unit of work. Some types of training methods can and will contribute more than others. The challenge for trainers is to carefully evaluate training methods to determine where they are getting the most return through improved performance.

This empirical study will focus on assessing the effectiveness of nine different training methods for particular training objectives. Although several studies have been carried out to assess the effectiveness of training programmes, only limited studies have been conducted on the effectiveness of alternative training methods. Besides, most of these research studies have been carried out on school/college students and not on employees. With manpower and capital being the two most basic and complementary factors of production in any organisation, an importance has been realised to

*Research scholar, Department of Business Administration, Aligarh Muslim University, Aligarh, Uttar Pradesh, India. E-mail Id: rizwanakhatun@rediffmail.com

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find the most suitable training methods to accomplish particular training objectives.

BACKGROUND

The process of employee recruitment and selection is an imperfect science (Macky and Johnson, 2000), creating performance gaps. Training and development are imperative in bridging these performance gaps. They equip new as well as existing employees to augment their repertoire of knowledge, skills and abilities, whereby they may integrate better with the organisation. Hence, besides bringing a boost in the career of the employee, training and development promotes the growth of the organisation as well. As such, there is no doubt that human resource development (HRD) has served the needs of organisations to provide employees with up-to-date expertise.

Employee training has been recognised as an example of a HRD practice that contributes to gains in competitive advantage (Schuler and MacMillan, 1984; Torraco and Swanson, 1995; Roecke et al., 2000; Lee and Bruvold, 2003; Mehta, 2011). Training is crucial for increased employee satisfaction, facilitates the updating of skills (Green and Sleight, 2002; Lee and Bruvold, 2003), leads to an increased commitment (Burke and Day, 1986; Bartlett, 2001; Brum, 2007; Owoyemi et al., 2011), contributes to productivity and organisational performance (Bassi and Van Buren, 1999; Santos and Stuart, 2003; Champathes, 2006) and strengthens the organisation's competitiveness (Burden and Proctor, 2000; Acton and Golden, 2003; Samuel and Chipunza, 2009). Training involves an understanding of an important support component of intellectual capital - people (Donohoe, 2004). Since people are the most valuable asset in an organisation, developing them is of critical importance (Richardson and Kleiner, 1992; Hameed and Waheed, 2011). This requires a clear understanding of how people learn.

Numerous methods and materials are available to trainers to prepare and equip employees to do their jobs better. However, with so many choices out there, it can be daunting to determine which methods to use and when to use them. No one method is a panacea to meet all training/business objectives. The key is to match the training method to the situation. In 1971, Carroll et al. (1972) conducted a study to find the relative effectiveness of nine different training methods for attaining six different training objectives. The results of their study is reported in virtually all major human resource management texts, in spite of the fact that the study is now over 30-years-old and was limited to the manufacturing sector (e.g., Cascio, 1989; Ghorpade, 1991; Mony and Noc, 1996; Kaupsins, 1997; Perdue et al., 2002). Later on, several researchers replicated the study by Carroll et al. (1972) in the service sector as well (Newstrom, 1980; Kaupsins, 1997, 2002; Perdue and Woods 2000; Perdue et al., 2002; Furunes, 2005). Indeed, we have often jumped onto the latest training bandwagon and discarded what may have been more effective approaches.

Whether a training approach is old or new is not relevant. What matters is if we are to improve training quality and be able to produce strong results, we have to use the best research evidence on which to base our decisions (Hannum, 2009). While discussing employee training methods, Carroll et al. (1972, p. 495) noted, "While availability of resources in the form of money, time, and personnel do play a significant part in the choice of one training method or another, another important criterion must be the relative effectiveness of the training method being considered for a particular training objective". This quote justifies the debate that some training methods are more effective than others, and hence careful decision needs to be made on the part of the trainer.

A conventional approach to effective training consists of four steps (Macky and Johnson, 2000; Tracey and Tews, 1995): (i) identifying training needs, (ii) establishing learning objectives, (iii) deciding training methods and (iv) systematically evaluating training efforts and outcomes (Furunes, 2005). Given that training is about changing the behaviour of the trainee, the measure of training benefits has to start with a consideration of the behavioural change that may or may not have occurred (Lashley, 2002). Since different employee training methods will have diverse outcomes regarding effectiveness, due to factors such as
training objectives and trainee characteristics, it is central to see how trainers perceive the relative effectiveness of the commonly applied training methods in modern organisations.

For this reason, to ensure relevance and learning effect of training programmes, it is essential to use training methods that fit the training objectives and also help in measuring the effectiveness of the training. Consequently, this study was undertaken to gauge the preference of training managers of the top 500 (ET500, 2012) Indian companies (according to their turnover) regarding the most effective instructional method for a particular type of training.

PURPOSE

- Although there is substantial research work on training and training evaluation, very few research works have been undertaken concerning the perceived effectiveness of training methods to date. Furthermore, no literature was found based on similar studies in the Indian subcontinent. Given the lack of existing research on the effectiveness of alternative training methods in India, it has become imperative to investigate the perceived effectiveness of different instructional modes for enhanced learning in the present world of continuous learning. Subsequently, the goal of this study was to investigate trainer perceptions of the nine different training methods towards the six training objectives. This study was to a great extent a replication of a study by Carroll et al. (1972), which was further developed by Furunes (2005).

OBJECTIVES OF THIS STUDY

- To assess the relative effectiveness of nine different training methods for achieving the six training objectives, and present the study in an easy-to-read grid of potential use by trainers.
- To find the method(s) considered most effective by trainers.
- To compare the preferred training methods in the Western and Indian corporate setting.

METHODOLOGY

Questionnaire

For this study, a questionnaire was constructed, which asked respondents to indicate the relative effectiveness of nine different training methods for achieving each of the six training objectives. A scale ranging from 1 (very ineffective), 2 (ineffective), 3 (neither effective nor ineffective), 4 (effective) and 5 (very effective) was employed. Respondents gave 54 ratings (9 training methods x 6 training objectives). In addition to these ratings, the respondents were also asked which of the nine training methods they employed most frequently. The instrument was administered online. It was used to increase the reliability of the results, as the questionnaire design was already tested in other studies (Carroll et al., 1972, Kaupins, 1997; Perdue et al., 2002; Furunes, 2005).

Sample and Analysis

A quantitative approach was undertaken for this study. Five hundred questionnaires were mailed to the training managers of the top 500 Indian Companies according to the Economic Times Top 500 Companies List (2012). A follow-up mail was also used to increase the response rate. There were a final useable 217 responses from training managers, which represented a return rate of 43.4%.

Three analyses were carried out to serve the purpose of this study. For the first part of the objective, the mean values of each of the nine training method variables within each of the six training objectives were calculated. The training methods were then ranked in order from the highest to lowest mean scores for each of the six training objectives. The second analysis was on frequency distribution of the training methods mostly used by training practitioners. Finally, for the third part of the study, Spearman’s rho correlation was carried out to explore the relationship among the six training grid studies between the rankings of the six training methods that overlap the present, i.e., Carroll et al. (1972), Newstrom, 1980, Kaupins, 1997, 2002 and Perdue et al. (2002) studies. Spearman’s rank correlation coefficient is a non-parametric measure of correlation, which helps to assess the relationship when the data are in terms of ranks.
Training Methods and Training Objectives

The nine training methods compared in the study were: case-study, lecture, one-to-one training, role play, business games, simulations, programmed instruction, CBT and sensitivity training. These nine training methods, along with description have been illustrated in Table 1.

Table 1: Training Methods and Definitions

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
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<tbody>
<tr>
<td>Case-study</td>
<td>Solving problems identified in scenarios</td>
</tr>
<tr>
<td>Lecture</td>
<td>Presentations to groups</td>
</tr>
<tr>
<td>Role play</td>
<td>Acting out the roles of participants in the problem</td>
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<tr>
<td>Business games</td>
<td>Computerised/person-to-person interactions</td>
</tr>
<tr>
<td>Simulations</td>
<td>Computer-generated scenarios</td>
</tr>
<tr>
<td>Sensitivity training</td>
<td>Confrontation and direct feedback by others in a group setting</td>
</tr>
<tr>
<td>Programmed instruction</td>
<td>Trainees learning on their own pace using workbooks, etc., in a graded sequence of controlled steps</td>
</tr>
<tr>
<td>CBT</td>
<td>Trainees learning on their own pace from CDs/via web, etc.</td>
</tr>
<tr>
<td>One-to-one</td>
<td>Discussion with small group or individual</td>
</tr>
</tbody>
</table>

Figure 1: Training Methods most frequently Used by Training Practitioners

The six training objectives considered as a part of this study were knowledge acquisition, attitude change, problem solving, interpersonal skill development, participant acceptance and knowledge retention. Table 2 identifies the six training objectives addressed by this study. Each had been a part of the study by Carroll et al. (1972).

FINDINGS

As the trainers had rated the effectiveness of the nine alternative training methods with respect to six different training objectives on a 5-point Likert scale, we may assume that a value below 2.5 indicates rating of the training method to be less effective than a method rated above 2.5. Table 3 illustrates the mean values for each of the training method for the six objectives. This study intends to review the results of the study in the form of the ranks the methods received for each objective. Training methods were thus ranked in order from the highest to lowest mean scores. These rankings of the various training methods are presented in Table 4.

Table 2: Alternative Training Objectives and Explanations

<table>
<thead>
<tr>
<th>Objective</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge acquisition</td>
<td>Helps trainees acquire new knowledge and skills</td>
</tr>
<tr>
<td>Attitude change</td>
<td>Useful in changing employees' attitudes</td>
</tr>
<tr>
<td>Problem solving</td>
<td>Useful in teaching trainees how to solve problems at work</td>
</tr>
<tr>
<td>Interpersonal skill development</td>
<td>Helps trainees learn to interact better with others</td>
</tr>
<tr>
<td>Participant acceptance</td>
<td>How likely the trainees are to enjoy the method</td>
</tr>
<tr>
<td>Knowledge retention</td>
<td>Trainees are more likely to remember what they learn</td>
</tr>
</tbody>
</table>

Objective 1: Training methods and training objectives

The means of each method for the six training objectives were calculated and correspondingly the methods were ranked from the highest to lowest mean values for each of the six training objectives. These results are presented in Tables 3 and 4.

As can be seen from the rankings, lecture is the most preferred training method to attain all objectives, except that which emphasises interpersonal skill development.
Table 3: Means of the Effectiveness of Training Methods for Different Objectives

<table>
<thead>
<tr>
<th>Training Method</th>
<th>Knowledge Acquisition</th>
<th>Attitude Change</th>
<th>Problem Solving</th>
<th>Interpersonal Skills</th>
<th>Participant Acceptance</th>
<th>Knowledge Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case-study</td>
<td>2.88</td>
<td>3.30</td>
<td>3.46</td>
<td>3.37</td>
<td>2.79</td>
<td>3.04</td>
</tr>
<tr>
<td>Lecture</td>
<td>4.07</td>
<td>4.09</td>
<td>4.37</td>
<td>1.09</td>
<td>4.06</td>
<td>4.19</td>
</tr>
<tr>
<td>Role play</td>
<td>2.18</td>
<td>2.14</td>
<td>2.47</td>
<td>4.05</td>
<td>1.86</td>
<td>2.64</td>
</tr>
<tr>
<td>One-to-one</td>
<td>1.87</td>
<td>1.96</td>
<td>1.69</td>
<td>3.68</td>
<td>2.40</td>
<td>2.03</td>
</tr>
<tr>
<td>Simulation</td>
<td>1.68</td>
<td>2.95</td>
<td>1.64</td>
<td>2.86</td>
<td>1.59</td>
<td>1.42</td>
</tr>
<tr>
<td>Business games</td>
<td>3.40</td>
<td>2.45</td>
<td>4.03</td>
<td>3.79</td>
<td>3.76</td>
<td>2.16</td>
</tr>
<tr>
<td>CBT</td>
<td>3.73</td>
<td>4.29</td>
<td>1.08</td>
<td>1.41</td>
<td>4.67</td>
<td>3.95</td>
</tr>
<tr>
<td>Sensitivity training</td>
<td>2.65</td>
<td>2.07</td>
<td>3.15</td>
<td>4.43</td>
<td>3.28</td>
<td>3.17</td>
</tr>
<tr>
<td>Programmed instructions</td>
<td>4.15</td>
<td>3.65</td>
<td>2.76</td>
<td>2.73</td>
<td>1.19</td>
<td>3.83</td>
</tr>
</tbody>
</table>

Table 4: Rankings of the Effectiveness of Training Methods for Different Objectives

<table>
<thead>
<tr>
<th>Training Method</th>
<th>Knowledge Acquisition</th>
<th>Attitude Change</th>
<th>Problem Solving</th>
<th>Interpersonal Skills</th>
<th>Participant Acceptance</th>
<th>Knowledge Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case-study</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Lecture</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Role play</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>2</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>One-to-one</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Simulation</td>
<td>9</td>
<td>5</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Business games</td>
<td>4</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>CBT</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>8</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sensitivity training</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Programmed instructions</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

For this objective, sensitivity training peaks the ranking, whereas lecture takes the lowest position.

CBT tends to rank high for bringing a change in attitude and is highly accepted by participants. It is also an important method for acquiring and retaining knowledge.

In the study by Carroll et al. (1972), case-study was amongst the top three methods in four of the six objectives. In the present study, it seemed to be less appealing for attaining the training objectives, with only one instance of it being among the top three in problem solving.

One-to-one training method (the most popular method for four objectives in the Carroll et al. study, 1972) was ranked the least useful method for all objectives in this study. Programmed instruction and CBT were ranked high for the changing attitude of participants and retention of knowledge, while CBT and lecture topped the list for solving problems and acceptance of the method by the trainees/participants.

Lecture, CBT and business games have an overall high rank for all the six training objectives. They were preferred the most by training managers in helping them achieve the six training objectives considered in this study.

Objective 2: Training methods employed most frequently

Figure 1 illustrates the methods most frequently employed by training practitioners. One-to-one training was used
most often by trainers (28%), followed by lecture (19%) and business games (11%). Although one-to-one was rated quite low for achieving the objectives, it seems to be employed most frequently in training. Role play and case-study are used less frequently (only 4% preferred it) by trainers for imparting training.

Objective 3: Comparison of the present study with other similar studies

For the purpose of this objective, Spearman’s rho correlation coefficient was calculated among the ranks of the six training methods (Table 5) in common between the six grid studies (Carroll et al., 1972; Newstrom, 1980; Kaupins, 1997, 2002; Perdue et al., 2002; present study). The training methods are lectures, business games, case-study, programmed instructions, role play and sensitivity training.

Although a strongly positive significant correlation ($\rho = 0.89, P < 0.05$) was found between the Carroll et al. and Perdue et al. study as also Carroll et al. and Kaupins (1997) study ($\rho = 0.83, P < 0.05$), but a moderate negative relationship was found between the former and the present study ($\rho = -0.26, P > 0.05$). On the other hand, except for a weak positive ($\rho = 0.09, P > 0.05$) relationship between the present study and the study by Perdue et al., all correlations were moderately negative between the former and the other four grid studies. The strongest correlation of 0.94 was found between the studies of Kaupins (1997) and Newstrom (1980). The lowest correlations were between the present study and the other five studies. The main factor affecting low correlations is the high ranking for lectures in the present study. Of the six training methods common to all of the studies, the present study ranked lectures first, whereas all of the other studies ranked it eighth/ninth.

A comparison of the top three ranked training methods was also done between the study by Carroll et al. (1972) and the present study (Table 6) to find the similarities/differences for each of the six training objectives between the two. Sensitivity training peaked for interpersonal skill development, while programmed instruction was perceived to be most effective in the study by Carroll et al. and the present study for knowledge acquisition. For attaining four of the training objectives, case-study was ranked high in the Carroll et al. study, but was preferred for only one objective in the present study. Although lecture seemed to be placed high in the present study for attaining most of the objectives, it was found nowhere among the top three methods in the Carroll et al. study. One-to-one, which appeared to be highly valued in the Carroll et al. study, was not seen to top the ranks in the present study.

DISCUSSION

One important aspect of the findings of the present study is its relevance to the Indian corporate preference for training methods in different situations. Although it may be noted that perceived effectiveness might not be the same as actual effectiveness, but it may be interesting to discuss the findings as to why they have been perceived.
to be more effective. The primary purpose of training methods is to help the learner learn better and faster. All methods and media (including various technologies that support the use of these methods and media) are useful only insofar as they make learning happen more effectively and efficiently.

In the present study, programmed instruction was perceived to be the most effective method to acquire knowledge, but was less accepted by participants and for interpersonal skill development. Research has shown that programmed instruction frequently leads to a more rapid acquisition of knowledge than do traditional (e.g.,

<table>
<thead>
<tr>
<th>Training objectives</th>
<th>Carroll et al. study</th>
<th>Present study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Acquisition</td>
<td>Programmed Instruction</td>
<td>Computer-based Training</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lecture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business games</td>
</tr>
<tr>
<td>Attitude Change</td>
<td>Role play</td>
<td>Business games</td>
</tr>
<tr>
<td></td>
<td>One to one</td>
<td>Business games</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lecture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business games</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>Case study</td>
<td>Computer-based Training</td>
</tr>
<tr>
<td></td>
<td>Business games</td>
<td>Lecture</td>
</tr>
<tr>
<td></td>
<td>Role play</td>
<td>Business games</td>
</tr>
<tr>
<td></td>
<td>One to one</td>
<td>Business games</td>
</tr>
<tr>
<td>Interpersonal Skills</td>
<td>Training</td>
<td>Lecture</td>
</tr>
<tr>
<td></td>
<td>Role play</td>
<td>Business games</td>
</tr>
<tr>
<td></td>
<td>One to one</td>
<td>Business games</td>
</tr>
<tr>
<td>Participant Acceptance</td>
<td>Programmed Instruction</td>
<td>Lecture</td>
</tr>
<tr>
<td>Knowledge Retention</td>
<td>Sensitivity training</td>
<td>Computer-based Training</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lecture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business games</td>
</tr>
</tbody>
</table>

Table 6: Ranking of Training Method Choices for Training Objectives for Two Studies
lecture-based) forms of instruction (Fernald and Jordan, 1991; Hughes and McNamara, 1961; Jamison et al., 1974; Kulik et al., 1980) and is superior to conventional teaching practices in promoting learning (Canton, 2005; Fernald and Jordan, 1991; Kulik et al., 1980).

Beginning as print-based text, programmed instruction grew to leverage each new media format as technologies merged and evolved. While programmed instruction has receded from the limelight (McDonald et al., 2005), technologies derived from programmed instruction, such as programmed tutoring, direct instruction and personalised system of instruction have gathered an impressive track record of success when compared with conventional methods, paving the way for CBT and distance learning (Joy II and Garcia, 2000; Molenda, 2008). In spite of these transforms, computer-based instruction (CBI)/CBT commonly used in both educational and business training settings still includes the primary components of programmed instruction, i.e., learning in a graded sequence of controlled steps (Jaehnig and Miller, 2007). CBI has been one of the most frequently used methods proven to be a cost effective yet an instructionally sound delivery method for learning (Blotzer, 2000; Wilson, 2000; Petty et al., 2007).

Yatrikis and Simon (2002) showed that students who chose to take an online course were more satisfied, and they perceived that they retained more information. Several researches has documented that the use of CBT results in increased knowledge retention by engaging multiple senses (auditory, visual and kinaesthetic) during the learning process (Smith, 1993; Congrane, 1995; Williams and Zahed, 1996; Dhanjal and Cais, 1999). These findings are congruent with the present study (high rank to CBT for knowledge retention, attitude change and participant acceptance).

An interesting revelation was that in spite of the technology age and its impact on instruction, today’s learners are still very much tied to the traditional face-to-face approach to learning. Except for interpersonal skill development, lectures pre-dominate the preference in all training objectives. Traditionally, instructor-led classroom training has been the dominant style of training delivery (Richardson and Kliener, 1992; Evuleoecha, 1997; Lawson, 1999; Salas and Cannon-Bowers, 2001; Buch and Bartley, 2002; Laurillard, 2002).

It has been found that people recall 50% of what they have just heard and 85% of what we know is learned by listening. This may be another reason for lectures to be a preferred pedagogical tool. The lecture has been much maligned as a pedagogical form, yet it persists and even flourishes today in the form of the podcast, the TED talk and the “smart” lecture hall (Friesen, 2011). Since lectures allow for limited involvement or participation (Richardson and Kliener, 1992; Read and Kliener, 1996), they have been perceived to be the least effective for interpersonal skill development.

One-to-one training is probably the oldest form of education used today. Parents have taught their children in this way for thousands of years, and senior employees have long used it to teach new employees their skillset. This “four-step” training method, consisting of showing, telling, doing and checking (Craig, 1961) has been used time and again to effectively train employees (Peterson, 1996; McClaran, 2003). A training paradox seems to exist as a one-to-one method, which was perceived to be quite low for attaining all training objectives, was the most frequently used method. Although the effectiveness of a training method is not the only factor to consider when designing a training programme (e.g., other aspects such as available resources, duration of training, cost, trainer variables, trainee variables, etc.), it certainly is one that will bear directly on the utility of the training programme and the consequent learning (Baldwin and Ford, 1988; Shoenfelt et al., 1991; Cannon-Bowers et al., 1995).

Sensitivity training has been observed to be the most effective for developing interpersonal skills. It provides a good vehicle for developing interpersonal skills and personal insight, allowing trainees to practice interacting with others and receiving feedback. According to Kurt Back (1987), “Sensitivity training started with the discovery that intense, emotional interaction with strangers was possible. It was looked at, in its early days, as a mechanism to help reintegrate the individual man into the whole society through group development.” Given
that sensitivity training focuses on being sensitive to and conscious of the feelings and attitudes of others, trainers consider the sensitivity training method to be the most apt for achieving social sensitivity through actual emotional experiences. Several researches on teacher training have revealed that sensitivity training helps in increasing the ability of teachers to build rapport with each other and students (Joyce et al., 1969; Lee, 1970).

It was striking to learn that no association was seen to exist among the perceived effectiveness rankings between the present (Indian context) and the other five studies (Western context). This shows that people in the Indian subcontinent still very much prefer the traditional “chalk-and-talk” method to case-study and one-to-one in the Western context. Although the one-to-one method was cited to be the most frequently used, it received a lukewarm response for attaining the six objectives. Although inherently lecture is a passive method, but in recent times it is often used in complement with multimedia making it an active learning method. Besides being the most common form of teaching, lectures have proven time and again to be the most effective in teaching in large groups, thus lowering cost. Moreover, training is generally seen as just a feel-good thing; the organisations are keen on cutting the training expenses to lower the burden of training the balance sheets. Lectures top their choices.

Although more conclusive research needs to be undertaken to propose one method over another in any training circumstance, the results of this study provide a foundation to make decisive decisions regarding training method selection. Besides, the numerous training methods that may be considered, additional training objectives need to be investigated. Researchers in future may also undertake comparative studies between industries, or investigate a particular sector of the industry in detail for providing clear guidelines for making decisions regarding training methods. Future research also needs to explore whether popularity impacts method effectiveness assessment or the assessment of a method’s effectiveness affects its popularity. Furthermore, research on training method effectiveness may be carried out with moderating variables such as gender, age, level in the organisation, learning style, self-efficacy, locus of control and training method familiarity.

CONCLUSIONS

This study serves to clarify our understanding of the effectiveness of various training methods for achieving six common training objectives. When investing in employee training, organisations should stress the use of training methods that fit the objectives of the training. This would not only help in better learning, but also gain organisational profitability through enhanced performance of employees and savings from overheads.

It was interesting that the one-to-one method reported as the most frequently used method was relatively less effective in attaining all the six training objectives. Lectures were preferred in attaining all training objectives. Strikingly, no association was seen to exist among the perceived effectiveness rankings between the present (Indian context) and the other five studies (Western context). This shows that the training pattern in the Indian subcontinent differs considerably and augments the fact that we have developed an altogether different approach to learning. Whether it is a better form remains an area to explore for future researchers. Although CBT has been considered quite useful in attaining training objectives, even today we prefer to learn with the traditional methods. However, with time it is expected that the Internet experience will become more immersive, and soon a shift will be felt everywhere that our lives intersect with technology, including learning.

REFERENCES


