CHAPTER - 2
REVIEW OF LITERATURE

2.1. INTRODUCTION
A review of literature related to the area becomes a necessity for the researcher because future research is built on the present progress. To achieve this, a researcher has to go through a huge amount of literature which already exists in various forms. He has to spend time and search for the relevant literature which would fulfill his needs. The review of literature provides a theoretical framework for the researcher on which the foundation of the research of the topic is being made. It helps the researcher to find the specific purpose of identifying the gap in the existing literature and also the scope for further research.

2.2. REVIEW OF RELATING CONCEPTS AND VARIABLES
Adams (2008) in his article on Rapid Talent Development states that “e-learning as a stand-alone solution has not been particularly effective, interest in e-learning as part of blended learning strategies is on the rise and it’s proving to be an effective delivery method” He further supports it with the findings of Brandon Hall Research Study (2007) – “The Real Story-Blended Learning”: that 70% of the participants have strongly agreed that they had better learning outcomes in a Blended Learning setting versus face-to-face settings. Almost 90% of the participants reported that blended approaches offered better outcomes than e-learning alone. As well, Blended learning is well preferred by learners and instructors when compared to face-to-face instruction or e-learning alone.
Akkoyunlu (2006)\(^2\) examined students’ view on blended learning environment and discovered that students enjoyed participating in a blended learning environment through which face-to-face classes supplemented with online classes. Moreover, they emphasized on the significance of communication and interaction for successful learning in online education. It provides some conveniences of fully online courses without leaving the face-to-face contact. He concluded that the benefit of face-to-face interaction is undeniable and its presence can promote the quality of pure online or traditional classes.

Allison Rossett and Rebecca Vaughan Frazee (2006)\(^3\) in his research report entitled “Blended Learning Opportunities” expressed Blended learning is a growing presence in workforce learning and performance. He made a point that “More than two-thirds of American organizations agree with training experts that classroom training—with its opportunities to interact with capable instructors and interested peers—is the best way for adults to acquire the new skills and behaviors that they need to move their careers, and their companies, forward.” He also observed from another survey of almost 300 training professionals in the US and UK, ASTD and Balance Learning reported that more than two-thirds of respondents ranked blended learning as “the most effective and cost-efficient form of training,”

Alvarez, 2005; Thorne, 2003\(^4\) expressed their opinion on blended learning that it has increased the communication among students and between the trainer and students. The trainer observed more socialization during training where in learners can interact with both the tutor and their peers.

Alonzo, Lopez, Manrique, & Vines (2005)\(^5\) wrote an article about blended learning that, videoconference learning is used in the same fashion as a traditional classroom negates the need for the learners and instructor to be physically together. Videoconferencing allows participants in different locations to view and interact with instructors and other trainees.
Live e-learning takes place in a virtual classroom at a scheduled time at which learner undertakes to attend, just as they would a traditional class, minus the travel. Further, learners can collaborate, share information, and ask questions of one another and of the instructor in real time.

American Express cited in Snipes (2005, p.72)\(^6\) that their findings clearly indicate that moving their staff through a training did not ensure a significant business impact but the level of positive behaviour change and resultant increases are almost entirely dependent on the sustainability climates to which the learners return. Their study found that those participants who had some form of structured follow-up and revisited the learning experienced overall productivity increased by 44% instead 18%.

Balance Learning,(2004)\(^7\) in their survey, they found that majority of learning professionals think that blended learning is the most efficient training method. It should be noted, however, that empirical studies on blended learning in workplace learning settings are still sparse. But in the words of Shaw and Igneri (2006) they feel that there is no proper research done in the area of blended learning at work place and lot more should be explored to find the impact of Blended learning at work place.

Baldwin and Ford (1988)\(^8\), the transfer of training is defined as “the degree to which trainees effectively apply the knowledge, skills and attitudes gained in training context to the job” transfer of training is one of the major concerns in training research. It can be considered as the purpose of training and organizations expectations for its employees who go through training. Learned Behaviour must be generalized to the work context and maintained over a period of time on the job. Many empirical studies have looked into the relationships of each entity and have found that all of these factors have relatively significant correlation to the training outputs as well as to the transfer of training.
Bdawi (2009)\(^9\) stated that blended environment provides an encouraging situation for both the traditional classrooms and the online settings. In other words, it is a range of delivery methods to meet the course objectives. He also stated the advantages of using blended learning are increased communication, engagement of face-to-face communication, Sense of community, Improved academic performance, Collaborative tasks, Adequate feedback, Active participation, Providing help and fun and practical manner of teaching and learning.

Bersin and Serveau (2004)\(^10\) argue that the flexibility in scheduling and format is critical to success. Students have to have access to most components of a system 24 hours to make it available when they are ready to study. The flexibility in media formats provides optimum learning experiences based on personal preference. To select the right methods and formats the learning styles and the education level of employees have to be considered along with the motivation of the learners.

Bersin and Associates (2003)\(^11\) in the journal of “Blended Learning Research Reports & examples of best practices, wrote an article titled “What Works?”. After nearly 2 years of research in blended learning, and detailed interviews with more than 30 companies, the company founds that blended learning is replacing e-learning as the next big thing. Research found that blended learning programmes are perhaps the highest impact, lowest cost way to drive major corporate initiatives. Companies have discovered unique and powerful methodologies for selecting the right media to solve a given business problem. The biggest challenges companies face include technology and the change management and business processes required to roll out major programs.

Bharadwaj and Karkera (2001)\(^12\) delivered a speech in the Conference titled “Employee training in quality in the new millennium”, much of job training occurs when the new employee shadows or observes his superiors and peers.
However, they posit that when provided, training programs should link training to outcomes. That is, success in training should be tied to results that enrich the organization’s value to customers and enrich employees' value. He further suggests that training will enhance employee commitment and contribution to the organization.

Bonk, Wisher and Lee (2003)\textsuperscript{13}, Thorne, (2003); Bersin, (2004); Singh, (2004) state that although numerous studies have investigated the implementation of the blended learning model, much ambiguity exists regarding its utilization in real-life situations and the optimal proportion of its components in different instructional situations. He also expressed most of the researchers have investigated the implementation of blended learning model. Much uncertainty exists regarding its utilization in real-life situations and the optimal proportion of its components in different instructional situations.

Bourne 2002 (as cited in Young, 2002)\textsuperscript{14} said “In future i.e. “within five years, people will see a very significant number of classes that are available in a hybrid fashion, somewhere in the 80%-90% range.” Buckley et al. (2002) and Tagg (1995) noted a paradigm shift in higher education leading to new models of teaching and learning, which is nothing but blended learning. According to his view, not only in corporate even in academic fraternity the blended learning concepts will be very important.

Boyle, T., Bradley, C., Chalk, P., Jones, R., & Pickard, R. (2003)\textsuperscript{15} in their research survey entitled “blended learning to improve student success rates in learning to program” published in Journal of Educational Media” pointed out that learner satisfaction and learning outcomes are superior in blended learning settings compared to those in online settings.
Cegos 2010\textsuperscript{16} concluded a study among 2,355 employees and 485 HR directors/training managers from companies employing more than 500 staff in the UK, France, Germany and Spain. The survey found that e-learning and blended learning programmes meet the expectations of users. The survey showed that “for 89% of employees, blended learning is living up to users expectations ‘well’ or ‘very well’, and the same was found for 82% of respondents using e-learning”. “The vast majority of respondents (88%) rated work-based scenarios as their top choice as a tool for improving the effectiveness of e-learning. In second place, 82% rated self-assessment techniques and in third place, 73% rated help from a tutor or peer.”

Charles R. Graham\textsuperscript{17} in his research paper entitled “Blended Learning Systems – Definition, Current Trends, and Future Directions” he mentioned the real experience of IBM that, it is following a learning phases:(1) online self-paced learning to acquire background information, (2) face-to-face learning lab focused on active learning and application experiences instead of lecture, and (3) online learning and support for transferring the learning to the workplace environment.

Charles R. Grahame et.al (2013)\textsuperscript{18} in a Journal of Internet and Higher Education, wrote an article titled “An Analysis of Research Trends in Dissertations and Theses Studying Blended Learning” and examined the literature related to learning effectiveness, learner satisfaction, faculty satisfaction, access and flexibility, and cost effectiveness. They identified the need for more theoretically grounded research and outlined opportunities for research exploring the link between satisfaction data and specific blended learning methods, accessibility, opportunity costs cost effectiveness and psycho-social relationships. This study identified the top 50 articles, 25 edited book chapters, 10 books, and 15 non-academic publications ranked by citation count.
These works indicate where the conversations on blended learning research are taking place. Researchers found that students participating in blended instruction produced stronger learning outcomes than those participating only in face-to-face instruction.

**Colm Fearon, Simon Starr and Heather McLaughlin (2011)** in their article entitled “Value of blended learning in university and the workplace: some experiences of university students” was published in Emerald Group Publishing Limited, stating that blended learning approach was very flexible and preferable by many students. Key emerging benefits in terms of flexibility and support; motivation and sharing ideas; class interaction and explanation of ideas; better than pure eLearning; communicating and teamwork; developing project leadership skills.

**Collis (2002)**, the concept of blended learning began in the corporate world. Corporate researchers and practitioners noted that technology enhanced learning alone was not enough, arguing that people needed experiential learning for the mastery and retention of knowledge and skills achieved through the blending of technology and face-to-face interaction. It means different things to different people. He also advise that communities can develop and increase their knowledge if they take on a culture of sharing experiences and solutions. The blended learning environment may be a wonderful source for an organisation to create such culture to design and promote a ‘learning to learn’.

**Curtis J. Bonk et.al (2005)** finding is important because 68 percent of the respondents indicated that blended learning was either important or very important for the strategic planning for training and development in their organizations for the coming years. Ironically, however, less than a half of those surveyed answered that their strategic plans were presently addressing blended learning.
Interestingly, while lack of management support is often a major challenge in delivering new forms of corporate training, only 11 percent of the respondents indicated that “lack of management support” was a problem of developing blended learning. Survey respondents indicated that their lack of understanding of blended learning was the most important issue that needed to be addressed to implement blended learning successfully.

**Delialioglu and Yildirim (2007)**[^22] claimed that there are many problems for purely online instruction like limited hardware, software, time, money as well as pedagogical problems. This has lead to a new idea of mixing the benefits of face-to-face courses with the benefits of online courses, known as blended learning. They believed that instructors can support their courses by online exercises, instant online feedback, and creating more valuable learning environments through hypermedia and multimedia.

**Dziuban et.al (2004)**[^23] their study shows that the majority of the respondents i.e. 78% have acknowledged an increase in their ability to learn through collaboration using blended learning methods. Ninety five percent of the participants are of the opinion that blended learning has encouraged them to establish relationships with other participants. Though only 61 percent prefer blended learning over pure face to face, 78 percent prefer blended learning experience over one that is solely online. Blended environment provides an encouraging situation for both the traditional classrooms and the online settings. According to the study it was observed that blended learning approach is likely to emerge as the predominant instructional model in the future. He further quoted that “blended learning represents a pedagogical approach in which the effectiveness and socialization of the classroom are combined with technologically advanced learning which is possible through the online environment”.

[^22]: Delialioglu and Yildirim (2007)
Eddie Kikelly (2008) in his View Point “Blended learning: pathways to effective project management” shares his real experience of working with over 4000 clients – spanning industry sectors – in 16 countries across the globe. Every project is made up of components like people, process and technology, which are inter-related and continually interacting with each other. One of the most successful way to create effective project managers is through blended learning.

Evelyn Gullett and Nelson D’Souza (October 2008) in their Case Study entitled “Blended Experiential Learning Leading To Quality Integration in the Workplace” investigated on how blended learning participants applied their quality learning in workplace. The result demonstrated that blended learning methodology allowed participants to acquire knowledge on how to integrate learning theory into their workplace. The result also revealed that blended learning experience had a positive impact on their workplace by means of increased self-development, self-confidence, time-management and organizational skills, collaboration and relationship skills. They also identified that Blended Learning will allow learners to share work experiences, compare and contrast best practices, benchmark with each other, and constantly improve and uncover new behaviours to handle situations and issues in the workplace differently after their blended learning experience.

Evidence That Blending Works Stanford University and the University of Tennessee have given us valuable insight into some of the mechanisms by which blended learning is better than both traditional methods and individual forms of eLearning technology alone. This is an evidence that Blending Learning even works at Educational fraternity. This research gives us confidence that blending offers the ability, efficiency, and effective learning delivery.
The Stanford research strongly suggests that linking self-paced material to live e-learning delivery could have a deep effect on overall usage and completion rates – enabling organizations to increase the return on their existing investments in self-paced content.

Gartner’s Lundy\(^{27}\) points to a major bank that puts more than two dozen of its high-potential internal candidates through a multifaceted simulator and asks them to run a company for a specified period of time. During the exercise, candidates try out a variety of jobs and are then assessed on how well they perform in each role. "The goal is to determine what skills and abilities they may have that aren't on their resume, but that they might be good at anyway,"

Gayani Samarawickrema, Deakin University et.al (2009)\(^{28}\) One of the Panel member for the Symposium expressed his opinion about blended learning that it is a quit complex as it depends on a series of contextual factors. An institution-wide qualitative research study conducted in a large multi-campus Australian university forms the basis of this study which found that the technology impacts on the institution and its practices, and in turn the institutional context shapes the adoption and use of the technology. The study showed that introducing blended learning is disruptive, imposing challenges at all levels across the institution.

Garrison and Kanuka (2004)\(^{29}\), he noted that true blended learning lessons do not involve supplementation with the internet two or three times a week, merely layering repetitive online content on top of face-to-face instruction, or dressing up old content in new cloths. In his view, blended learning is a ‘reorganization and re-conceptualization of the teaching-learning dynamic’. He also stated, “if balance and harmony are the qualities that are sought for in blended environment, one must first identify precisely what is to be mixed together"
Graham (2006)\textsuperscript{30} in his book titled “Blended learning systems: Definition, current trends, and future directions” argued that, Blended Learning is more specific than simply combining two or more instructional modalities. He also suggests that there were primary reasons for adopting a blended approach to instruction: Improved reased access and flexibility, and better cost-effectiveness. It can be used to ‘foster learning communities, extend training events, offer follow-up resources in a community of practice, access guest experts, provide timely mentoring or coaching, present online lab or simulation activities and deliver supplemental course materials’.

Goldstein (2002)\textsuperscript{31} mentioned Kirkpatrick’s evaluation model as an example that consists of different levels of evaluation measures. The second focus of the evaluation phase is to determine how to evaluate the training program. This depends on the type of outcome or information that is needed as a result of the evaluation. In the training and development phase, the primary goal is to blend instructional learning principles with the effective selection of media in order to determine the type of training program that will yield the best outcome.

Guild (2003)\textsuperscript{32} in their survey, they found that management skills and business skills were taught most often in a blended mode. This survey also reports that 60\% of the respondent organizations were measuring the increase in knowledge or skills from blended learning and another 30\% were measuring an impact of blended learning on job performance to evaluate blended learning programs. While these report documents carry practices in blended learning largely in North America, there is a scarcity of research on global trends related to blended learning both in terms of current practices and future projections.

Gwyneth Hughes (2007)\textsuperscript{33} states that blended learning provides good learner support. It offers the learners distance learning model and helps to improve retention also provides effective course work module to learner supporter. It also assists and improves the attributes towards motivation and tutor support.
Harvi Singh and Chris Reed, Centra Software - University of Tennessee’s Physician’s Executive MBA (PEMBA)³⁴ Research by program2 for mid-career doctors have demonstrated that blended learning programs can be completed in approximately one half of the time and at less than half of the cost using a rich mix of live e-learning, self-paced and physical classroom delivery. Of even greater interest, this well-designed program was able to demonstrate an overall 10% better learning outcome than using the traditional classroom learning format alone. This represents the first formal study to show significant improvements from e-learning rather than just equivalent outcomes. This exceptional result was attributed by PEMBA to the richness of the blended experience that included multiple forms of physical and virtual live e-learning, combined with the ability of the students to test their learning in the work context immediately and collaborate with peers on its adaptation to their unique environments. Taken together, these studies show us that, regardless of whether your starting point is the traditional classroom or self-paced e-learning, the diversity of a blending learning experience appears to have a significant impact on the overall effectiveness of a learning program relative to any individual learning delivery method alone.

Honey (2006)³⁵ argues that Blended Learning will allow learners to share work experiences, compare and contrast best practices, benchmark with each other, and constantly improve, and uncover new behaviours to handle situations and issues in the work place differently after their blended learning experience.

Huston and Weaver (2008)³⁶ in their article entitled “Peer review in online and blended learning environments” state that literature highlights important considerations for peer review including: the purpose of the interaction; who will be involved in the review; what makes an effective review; and how to minimize commonly encountered issues.
The purpose of the review needs to be considered in terms of both purpose and dealings. In blended learning environments, reciprocity of peer review is particularly valuable, providing “mutual support in the often isolated process of teaching online” (Bennett & Santy 2009, p404).

Iain S. Macdonald, Mark Bullen, Robert Kozak (2007)\(^{37}\) case study entitled “Identifying Effective Pedagogical Approaches for Online Workplace Training: A case study of the South African wood products manufacturing sector” he suggested that, e-learning can be made more effective combined with traditional, than with other combination methods of educational delivery. The study was supported by Gray, C. (2006).

Jillian Ireland, Neil Johnson, David Adams, Winifred Eboh, Elaine Mowatt (2009)\(^{38}\) in their article evaluate a blended learning approach in terms of the knowledge, attitude and experience of participants who completed an undergraduate module ‘Research and evidence-based practice’. Their article focused on study of learning approaches using mixed methods and the study found that the blended approach was generally well received. Overall, using a blend of teaching and learning methods was generally a positive experience for students in terms of knowledge and ‘usefulness’.

Joanna Poon, (2012)\(^{39}\) in research paper entitled "Use of blended learning to enhance the student learning experience and engagement in property education", found that blended learning gives greater flexibility for student learning in terms of learning style and study pace. With the adoption of a wide range of delivery methods, blended learning can successfully improve students' experience and enhance their engagement. The study also reveals that learning is really “blended” and includes a good mix of delivery methods.
John Trasler (2002) in his book “Effective Learning Depends on the Blend”, Industrial and Commercial Training” expressed his opinion that blended training met the requirement of both individual learner and company. In order to benefit from the learning programme companies must invest in blended Module learning type for their employees.

Jones, P et.al (2007) in his research paper entitled it’s all in the mix: “the evolution of a blended e-learning model for an undergraduate degree”, he stated that the blended learning pedagogy strategy which was developed replica the best informal practice that had emerged through each of the partner institutions and the learning needs of the students. Constituent elements of the pedagogy included the provision of structured face-to-face events; a range of student supports systems and the creation of a code of practice for online tutors. As a result, a model of best practice for blended learning is proposed.

Karen Precel et.al (2009) Pedagogical and Design Aspects of a Blended Learning Course - Their findings indicate that majority of the students expressed their positive opinion on interactive learning components, such as discussion groups and constructivist tasks, which is in agreement with other studies that explored the significance level of students towards blended learning.

Karamizadeh et.al(2012), “The Study of Effectiveness of Blended Learning Approach for Medical Training Courses” – The study was performed on 130 students at different clinical levels participating in class sessions. Respondents were asked to fill pretest questionnaire as well as post test questionnaire with some time gap. The researcher found, there is a significant correlation between pretest and posttest Scores. Post test score significantly more than the pretest scores. Findings generally showed that the blended learning was an effective approach in making a profound learning of academic subjects.
Kate Cobb (April 2010)\textsuperscript{44} – through his article in Blended Learning Zone, entitled “blended learning - the way forward?”, Cited Cegos March 2009 (Global Training Provider) who conducted a Survey on identifying innovative training practices and new technologies among 2,355 employees in Europe, excluding HR directors and Staff. The survey found that “half of the employees preferred to learn by blended learning. They also recommend blended learning practice for the future of Professionals, Directors and others”. Further the survey insisted Peers feedback as well as Instructor’s feedback for better performance of employees at workplace. The survey also showed the interest level of the trainer while delivering the training as well as the benefit of participants after blended learning.

Kathleen Matheos (2005)\textsuperscript{45} in his article “Dimensions of Blended Learning Technology Learning Perspectives” cited (Singh, 2003, Collis, 2002) that the concept of blended learning began in the corporate world. Corporate researchers and practitioners noted that technology enhanced learning alone was not enough, arguing that people needed experiential learning for the mastery and retention of knowledge and skills achieved through the blending of technology and face-to-face interaction. According to them blended learning means different things to different people. There is a growing literature that associates blended learning with flexible delivery of instruction.

Kanuka (2008)\textsuperscript{46} in his article argues that a hybrid instructor must be aware of three competing psychological impressions of technology and their impact on the field of blended learning: user determinism, social determinism and technological determinism. Blended learning has been applied in higher education and workplace learning settings on a global basis and can lead to improved pedagogy, increased access and flexibility, and better cost-effectiveness.
Kim, Bonk and Zeng (2005) in their recent survey indicate that the use of blended learning in all of training in the United States is projected to jump to nearly 30% by 2006, almost double that of 2004. Furthermore, it is conceivable that 80% to 90% of college and corporate training classes will be blended by the end of the decade and that more than 1 billion learners around the globe will be advancing their skills in this fashion. The study was supported by the survey of Balance Learning, 2004. In another survey of Sparrow, 2004, almost 300 training professionals in the US and UK, ASTD and Balance Learning reported that more than two thirds of respondents ranked blended learning as “the most effective and cost-efficient form of training,” and indicated that “blended learning will make up about 30% of all corporate training budgets by 2006,”

Kyong-Jee Kim, Ya-Ting Teng and Curtis J. Bonk – 2008 in their research titled “Blended Learning Trends in Workplace Learning Settings: A Multi-national Study Running head: Corporate Blended Learning Trends” surveyed 674 employees from five different countries (i.e., China, South Korea, Taiwan, United Kingdom, and the United States) about current status of blended learning in respondent organizations, and predictions of the future state of blended learning. A majority of respondents reported that improving the quality of learning experience, an increase in the availability and accessibility of learning, and cost reductions were the major key drivers for adopting blended learning in their organizations. One-third of those respondents indicated that blended learning was very important for the strategic planning of training and development in their organization for the coming years. From the above result, it is clear that how learners in workplace settings perceived blended learning and how it has impacted their job performance.
Korkmaz and Karakus (2009) in their article entitled “The impact of blended learning model on student attitudes towards geography course and their critical thinking dispositions and levels” did a survey consisting of 57 students 28 in the experiment group and 29 in the control group at Kirsehir High School. The experiment group was subject to hybrid learning through the Geography web page, while the traditional learning model was used for the control group. The data were collected through literature review, the Geography Attitude Scale, and the California Critical Thinking Disposition Inventory with Cronbach Alpha values of 0.92 and 0.88, respectively. The data were then subjected to percentage, arithmetic mean, t-test, ANOVA and Pearson correlation tests and the results were interpreted (p<0.05). As a result, Blended learning model contributed more to student attitudes toward geography course when compared to the traditional learning model; blended learning model contributed more to student critical dispositions and levels when compared to the traditional learning model; and there was a positive correlation between student attitudes toward geography course and their critical thinking dispositions and levels.

Learning Circuits, survey they asked readers if their organizations were considering increasing e-learning initiatives as the result of the economic downturn. 71 percent of the respondents answered yes. It is important to assess the learner’s skills before and after training. This will ensure the trainee receives the level of instruction needed using the most effective delivery media to reach the learning objective in the shortest time span.

Maryam Tayebinik in his article investigated the advantages of blended learning over single learning module. The survey revealed that blended learning is more favourable than pure e-learning or pure class-room learning and this learning can be considered as an effective approach in terms of student-instructor interaction, students learning experience and feedback from instructor as well as peers for better output.
He also observed from the survey that blended learning offers an active learning environment with flexibility in using resources for the students and it improves the quality of learning.

**Masie Center (2006)** their report related to learning delivery methods in workplace learning settings shows that classroom delivery is used for leadership/supervision, sales/customer service, and orientation, whereas e-learning delivery is used for HR compliance, safety, and IT systems or software. Another survey by the eLearning **Guild (2003)** found that management skills and business skills were taught most often in a blended mode. This survey also reports that 61 percent of the respondent organizations were measuring the increase in knowledge or skills from blended learning and another 30 percent were measuring an impact of blended learning on job performance to evaluate blended learning programs. While these reports document current practices in blended learning largely in North America, there is a paucity of research on global trends related to blended learning both in terms of current practices and future projections.

**MacDonald (2006, p.3)** cites **Laurillard (2002)** in suggesting that “a balance of media is essential to make learning and teaching effective”. She argues that supporting learners is the essential issue, and that, while automatic online support is beneficial, “tutor-mediated support” is central to blended learning.

**Mehmet Sahin (2010)** stated through his research, that blended learning plays a vital role in Corporate as well as Higher Education. A qualitative study was carried out by him using an interview technique with a trainer who applied a blended training model in a vocational organization. The objective of the research was to determine whether blended learning is effective in mechanical manufacturing training. The result indicated in a positive way that it was effective and its approach was very useful at work place.
In his article he cited Osguthorpe and Graham's (2003: 227) findings and stated that a 'blended learning environment maximizes the benefits of both face-to-face and online methods.

Michael A. Cucciare, Kenneth R. Weingardt, and Steven Villafranca (2008)\textsuperscript{55} In their research entitled “Using Blended Learning to Implement Evidence-Based Psychotherapies” state that researchers agree that using single learning (class room setting) limits information to the individuals who are able to attend the specific teaching session. Using web in self-paced or live internet class, many individuals could access that information at any time and from a range of locations.

Mungania.P (2003)\textsuperscript{56} in his research report on “The seven e-learning barriers facing employees: Final report” study, the perceptions of 875 corporate employees and suggests seven barriers in e-learning which creates the problem in implementation of learning at workplace. They are Personal barriers, learning style barriers, instructional barriers, organizational barriers, situational barriers, content stability barriers, and technological barriers. It is critical to determine if these same barriers also exist in implementing blended learning.

Myeong-Hee Seong’s\textsuperscript{57} research entitled “Reflection on the Use of Blended Learning” was about to identifying the enhanced learning of Korean University students. The analysis of the data indicated that the overall student perception of smart and blended learning environments are positive. In addition they expressed their satisfaction about course content. He also observed that, 100\% of students would enroll in another blended learning course, if it were offered. This shows that students strongly prefer blended learning and they prefer to have immediate feedback about their work from instructor.
Nagel (2009)\textsuperscript{58} in his article, Meta-Analysis: Is Blended Learning Most Effective states, “The United States Department of Education reported recently that it has found some evidence to support the notion that blended learning is more effective than either face to face or online learning. Further, between online and face-to-face instruction, online is at least as good and may even have the advantage in terms of improving student achievement and potentially expanding the amount of time (and quality time) students spend learning.”

NTL Institute for Applied Behavioral Sciences in Alexandria\textsuperscript{59}, conducted a survey and found that on average, students retain 5\% of what they hear in lectures, 10\% of what they read, and 20\% of what they see and hear in audiovisual presentations. But add "practice by doing" and "teach others/immediate use" to the mix — two learning techniques that computerized simulations possess in spades — and retention rates shoot up to a jaw-dropping 75 \% 80\%, respectively.

Paul A. Schlag (2001)\textsuperscript{60} in his article he Cited Bharadwaj and Karkera (2001) Survey that training will enhance employee commitment and contribution to the organization. With all of its potential benefits, e-learning alone is inadequate in producing optimal results. The author believe that gains in employee skill and knowledge can be achieved through blended learning. It utilizes technology to increase employee’s knowledge and skills. It is also revealed from the result that it is relatively new in the workplace, but it is rapidly growing in popularity and use.

Paul Washington (2009)\textsuperscript{61} in his thesis he analyzed the training effectiveness through Kirck Patrick’s Learning model, suggests moving from one level one to level four sequentially with each level building upon the previous level. The higher the level is measured, the more precise measure of overall effectiveness of the training program. However, the measurements tend to be more detailed, specific, time-consuming and costly.
It is this reason that many organizations may stop at level three. However, it is precisely this level where an accurate return of investment be realized. Many of the assessment tools used in this model, such as surveys and questionnaires, may be acquired in person or online in a blended learning fashion.

Perera (2010) concluded that compared to the virtual learning environment, blended learning offers a more successful learning experience since it contains some aspects of traditional classes. Moreover, mere virtual learning still consists of many problems in the area of education. He also stated that, sole e-learning courses is more demanding for instructors and more time commitment is expected of the teacher So, mere online instruction has been denied by many researchers and blended environment has been suggested because of its comprehensible advantages to the educational institutions.

Pitt, Edd, Buckley, Charles, Alan, Owens, Tessa, Norton, Bill – (2010) Students approaches to study, “conceptions of learning and judgments about the value of networked technologies” – The research was done based on focused group of 144 students, to assess the attitudes towards the use of blended curriculum. Significant positive associations were found between innovative approaches to study and student’s perceptions of blended learning. Further the survey found that the online forum was viewed as a site where they could benefit from sharing of personal experiences. Recommendations were offered for designing a blended curriculum.

Reay (2001) blended learning is not just the addition of online materials to a conventional training environment; blended learning must be relevant and requires a holistic strategy that utilizes the best characteristics of all learning interventions. The methods and techniques selected should be appropriate for the subject.
Rossett, Dougls, & Frazee et.al (2003) observed that organizations are recognizing the potential benefits of blended learning for improving learning and performance. At rest they also found that there were many issues to be addressed in delivering blended learning in workplace learning settings.

Rossett, A. (Ed.). (2002) in their article in American Management Association Journal, entitled “An Introduction to Blended Learning report” mentioned that providing several linked options for learners along with the classroom option, found that there was an increased level of learning, and interactional attitude and improved level of satisfaction in learning, acquiring the new skills and gaining the knowledge is highly possible for the learners. They also found through Thomson and NETg 2003 – white paper article titled “The Next Generation of Corporate Learning”: Achieving the Right Blend, that the speedier performance on real world tasks by people who learned through a blended strategy was faster than those studying through e-learning alone.

Robison’s (2004) study investigated the experiences of ten faculty members in designing and teaching blended learning courses at Brigham Young University. The results of the study revealed that the participant faculty members perceived three major benefits in the blended learning experience. First was the more effective use of class-room time; second was increased flexibility in meeting time constraints of both student and professor; and third was greater ability to meet the needs of individual students. Consequently, the study underlined the effectiveness of blended learning environments and recommended it to be used extensively in undergraduate courses.

Salaway, Caruso & Nelson (2007) stated that blended learning environments, involve the blending of face-to-face, online, print-based and other media to create an overall learning environment for students namely Learning Management System(LMS) within their courses.
They observed and revealed that 82% of their sample of US students expressed that the blended learning technologies have increased the positive attitudes which includes better access and qualitatively different and enhanced learning outcomes.

Sarah Boehle (2005)\textsuperscript{69}, vice president of Gartner, the Stamford, Conn. research firm, quoted James Lundy’s words in his article titled “Simulations: The Next Generation of E-learning” students learning via simulation-based training become proficient more quickly. When students learn the job, it usually takes them longer to perform the same task with the same proficiency, he says that simulations allow students to practice newly acquired skills and apply new knowledge in a realistic, yet risk-free, environment.

Singh and Reed (2001:2)\textsuperscript{70} characterized blended learning as “optimizing achievement of learning objectives by applying the “right” blended learning technique to match the “right” personal learning style to transfer the “right” skills to the “right” person at the “right” time. He describes the feature of blended learning as, it will reach a broad corporate audience and it is a very good business plan for sales and production department.

Singh (2003)\textsuperscript{71} noted that organizations must utilize in their strategies a blend of learning approaches to get the right content, in the right format to the right people at the right time. It is the combination of these factors rather than the reliance on technology alone to facilitate learning and knowledge transfer.

Sitzmann, Kraiger, Stewart, & Wisher (2006)\textsuperscript{72} provide preliminary evidence related to the effectiveness of two different modes of instruction; i.e., online and Face-to-Face instructions. They found the result that the blended learning had increased the flexibility and enhanced interaction. Furthermore, some studies suggest that higher education instructors have a high level of satisfaction with blended courses, due largely to increased flexibility and enhanced interactions in Web-enhanced environments.
Snipes (2005), he argues that several key blended learning principles must be implemented in order to attain the results. These include ensuring a parallel between learning and performance context, prompt repetition in teaching skills; and practice and repetition of skills spaced over time. Using a single method of learning can limit the reach or number of people exposed to information. Using a classroom setting limits information to the individuals who are able to attend that specific teaching session. In contrast, if the information were posted on the Web in a self-paced course or live Internet class, many individuals could access that information at any time and from a range of locations. He argues that several key Blended Learning principles must be implemented in order to attain such results. These include ensuring a parallel between learning and performance context (to ensure generalizability of skills); prompt repetition in teaching skills; and practice and repetition of skills spaced over time.

Sparrow (2003) reports on an online survey conducted by Training magazine in June, 2003 which highlights the reasons for developing blended learning solutions as Ability to match learning styles (80%), Individually tailored solutions (70%), Improve the learning rate (62%), Exploit the investments they've already made in re-usable training resources (59%), Shortage of time to use purely classroom events (57%).

Susan Santo (2006) Assistant Professor of Technology for Education and Training at the University of South Dakota, mentioned in his article about three learning style of instructions. The first is to identify each student’s learning style and then teach them their strength and preferences. The second, is to identify a student’s preferred learning style and teach them their opposite style and preference in order to overcome their weaknesses. The third approach is to utilize several different instructional methods and media in a class with the hope of reaching to all students.
With this approach, the variety and availability of delivery methods will hopefully accommodate all learners; no matter what learning style they prefer, which is nothing but blended learning.

Suli (2007) in his research article, mentioned the characteristics of the students at the end of blended course, the role of the tutor who supported the students in the class-room and the positive opinion of the students about blended learning. All the above factors were proved in his research and his research results confirmed that the tutor supported blended learning approach was an appropriate way of e-learning. The tutor’s role was found more important than expensive multimedia study materials. Therefore it is necessary to pay attention to continuous and quality tutor training.

Swinglehurst et al. 2006; Bennett & Santy 2009; Wood & Friedel (2009) expressed their opinion on Peer review that, this method of teaching presents particular opportunities and challenges in blended learning environments. The lack of literature in this area presents challenges: Much remains to be explored, researched and documented as to how, and how far, ‘online-ness’ impacts the peer observation process, the experience and the benefits for participants. The evidence is that distinct strategies, processes and models are probably needed to provide guidance for transferring peer observation online. Both the implementation and exploration of online peer observation are still in their infancy and a wide range of aspects remain to be investigated. (Bennett & Barp 2008, p. 564).

Tammy Dewar & Dave Whittington (January, 2004) in their research report, they quoted (Job, 2003) which goes thus “survey showed that a structured curriculum of blended learning generated a 30% increase in accuracy of performance and a 41% increase in speed of performance over single-delivery options”. The results of his research revealed greater percentage of job accuracy for the blended learning group.
The Learning Guild (2003)\textsuperscript{79} in its survey entitled “Blended Learning Best Practices” states that over 85\% of organizations are using blended learning for the creation and/or delivery of educational content. The experience of respondents has been positive, with more than 76\% saying blended learning was more effective than classroom training, and 73\% suggesting that blended learning had a higher learner value/impact than non-blended processes. Over 36\% of the respondents used 6 to 10 different components in their blended program. The top five components were classroom instruction, interactive web-based training, email communication, self-paced content, and discussions.

Todd Kern and Adam Rubin (2012)\textsuperscript{80} “Innovating Towards New Learning Models” reported that most of the participants (90\%) shared a general belief that potential technology enables more blended /personalized learning experiences.

Twigg (2003)\textsuperscript{81} in his article, quoted “The Center for Academic Transformation” as developing primary models for cost effectiveness in blended learning. Using the blended models, several institutions have demonstrated that it is possible to improve quality and reduce costs, typically through reduced dependence on human resources. His study was supported by Robinson (2005) who demonstrated that, by adding technology to the instructional design, quality increases, and in most cases costs are comparable to somewhat lower than face-to-face offerings. From the above literature it is clear that mixing of two different learning leads to increase in quality and performance.

Valiathan (2002)\textsuperscript{82} identifies three categories of blended learning for training and performance: skill-driven learning activities focusing on teaching a specific set of skills, learning activities geared toward change in attitudes, and blending performance support tools with knowledge management resources and mentoring to develop workplace competencies.
Vaughan (2010)\(^{83}\) noted that blended learning can be an opportunity to fundamentally redesign teaching and learning approaches in ways that realize increased effectiveness, convenience, and efficiency. The literature also indicates that blended learning provides a way to better address the multiple needs of learners.

Virpi Slotte, Anne Herbert, (2008)\(^{84}\) in his research paper entitled "Engaging workers in simulation-based e-learning", found that a majority of the participants conveyed improvement in their overall level of customer service skills applied in their own work tasks. In addition to the on-line simulation being an engaging and fun way of learning, the socially situated interaction and blended delivery of the training program encouraged and facilitated discussion and fruitful debates about customer service in the workplace.

Vygotsky\(^{85}\), argues that all learning is inherently social and learners benefit most from social interactions concerning tasks that they perform in collaboration with more knowledgeable or more experienced individuals. A number of studies and reports indicate that a blend of learning methods or a hybrid model is better than any single modality of delivery on its own, regardless of content. The Thomson NETg Job Impact Study also showed that blending of any type increases mastery on a task.

Usta (2007)\(^{86}\) conducted a study titled “The Impact of Blended Learning and Online Learning Environments on Academic Achievement and Satisfaction” on 73 students enrolled in the course on “Planning and Evaluation in Instruction.” This study reported that blended learning contributed more to academic achievement and retention of information when compared to online learning; and that the experiment and control group students were satisfied with student-student interaction, student-instructor interaction, instructor support, course structure and institutional support in distance education.
Wenger and Ferguson (2006) describe how their company has come up with a framework to guide the design and deployment of their trainings and courses. It reflects the idea that most learning environments are blended already, considering that even a classroom-only course incorporates a variety of different learning modalities.

Webb et al (2005) in their study shows that 78% of the respondents have acknowledged an increase in their ability to learn through collaboration using blended learning methods. 95% percent of the participants are of the opinion that blended learning has encouraged them to establish relationships with other participants. Though only 61% prefer blended learning over pure face to face, 78% prefer blended learning experience over one that is solely online. Their study confirms that blended learning has merit, compared to pure online learning wherein the participants lose interest and drop out and pure classroom learning may lack follow up.

Whitney (2005) states that in Schneider Electric, an international company with more than 85,000 employees worldwide uses a blended approach for their professional Managers Development Program (PMDP). The same approach was practiced by Richardson and eCornell for a sales and service training program that launches a highly interactive classroom event followed by online modules for continuous reinforcement.

Yoon Suk Lee (2007) pointed out in his research titled “An Approach to Identify Effective Learning Outcomes for Training Program”, that there is a strong correlation between learning score and job performance. His survey showed a positive result that the learners were able to perform expected outcomes in such way that they have demonstrably learned during the training. The survey also insisted the importance of evaluating Multi-dimensional learning outcomes of employees like Knowledge, Skills, and Attitudes gained in training context to the job.
Zenger and Uehlein (2001) emphasize the importance of a blended solution of e-learning and instructor-led education. They predict that there are benefits to be gained from integration. Blended programs offer variety. Such programs could take the form of assessments, online coaching or mentoring, self-paced Web-delivered content, behavior modeling, simulations, full-motion video, and online testing. According to the authors, both e-learning and instructor-led learning should have specific functions in the delivery of training. E-learning ought to deliver content, management processes, process assessments, and feedback tools. Instructor-led education should touch students’ emotions, help them practice and rehearse skills, discuss challenges as a group, and encourage feedback between the instructor and the participants. Blended learning can provide trainees with a variety of options for receiving the knowledge and skills necessary for success in the organization. But generally e-training programs are poorly designed and have insufficient focus where training content is not relevant. The above statement was proved with the result that 30% of the e-programs are appropriate and also proves to be expensive when the organization wishes to use it as a means of teaching hard skills through simulation. That’s the reason for integration of e-learning and instructor-led learning together to increase the performance of employees.
2.3 RESEARCH GAP

The present study was conducted by the researcher, as she found out there is a gap in Kirck Patrick’s Learning Model in the corporate world. Therefore the researcher examined, Kirkpatrick’s training evaluation model (Kirkpatrick & Kirkpatrick, 2006) by assessing a blended learning program conducted at Caterpillar India Limited, an organization in Manufacturing Industry. The research assessed the employees learning outcomes of Knowledge, Skills, Attitude and Job performance, and the impact of the learning upon the organization. By assessing these training outcomes and their relationships, the study established whether Kirkpatrick’s theories are supported with the level two and level three of IV levels, and that can be used to predict organizational impact.

Since researcher found from the literature, researcher found that there is a wide scope for the blended learning at Corporate Level as well Educational Sectors. Since Blended leaving in suitable, for any type of Industry as well as academic sector.