

The Impact of Planned Informal Learning Methods on the ROI of Training

Karubaki Preetisikta

Department of Psychology, Christ University, Bangalore, India

Abstract The current study is an empirical comparative analysis of the Return On Investment of training in two organizations. The first organization is one that uses informal learning methods and second organization depends only on formal training for its learning goals. This study is to see if informal learning methods impact the extent to which employees learn what is taught in formal behavioural training. The study used Personal Effectiveness Scale(1)(1) to measure the levels of self disclosure, openness to feedback and perceptiveness across the two organizations using a Pre and Post intervention design. The investigator then compared the changes in the Personal Effectiveness scores among the employees of the two organizations using GLM repeated measures ANOVA. The results indicated that while there were significant changes among all the participants post training in all the dimensions of Personal Effectiveness, there was no difference in the scores of the two organizations. This indicates that the training produced positive ROI in behaviour of the employees regardless of which organizations they belong to, but the data does not support the hypothesis that informal learning methods enhance learning.

Keywords ROI of Learning, Personal Effectiveness, Informal Learning, GLM repeated measures and Learning Organization

1. The Impact of Planned Informal Learning Methods on the ROI of Training

Organisations now are battling a competitive market, volatile economic conditions, speed of light technological developments and a complex work force. In such a situation there is a growing need felt to turn to academia to provide certain solutions to the various problems faced at work. A solution is to make organisations dynamic learning environments, in short transform into learning organisations. Today learning organisation is seen as an ideal state, 'towards which organizations have to evolve in order to be able to respond to the various pressures[they face]'[2].

A learning organisation is defined an organization where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together.[3]

In order to achieve an optimal learning environment, organisations need to plan out both formal as well as informal methods of learning and focus on specific goals for each. However, creation and structuring of informal and

formal learning plans are not enough. Integration of the two learning domains, proper implementation of learning strategies and evaluation of formal and informal learning methods are necessary to ensure the quality of the process and to measure how effective the endeavour has been.

Recently, research has redirected its focus on informal learning. Emphasis is being given to informal learning to enhance performance and behaviour. Informal learning, such as learning out of school, should be recognised as at least as significant as formal learning.[4]

Informal learning, a category that includes incidental learning, may occur in institutions, but it is not typically classroom-based or highly structured, and control of learning rests primarily in the hands of the learner. Informal learning can be deliberately encouraged by an organization or it can take place despite an environment not highly conducive to learning[5]. Informal learning occurs in the presence of both action and reflection, and includes self-directed learning, networking, coaching, mentoring, performance planning and trial-and-error[6]. With reference to informal learning, Donald Clark[7] states "rather than learning being organized around an event, it becomes a network of both planned and spontaneous situations."

Informal learning already exists in daily life. Each experience can be a learning experience. However, an organisation has the capacity to structure and plan the informal learning that takes place inside the work place. This is also referred to as Non-formal learning which according to Michael Eraut[8] is more apt. The management may not be

* Corresponding author:

karubakipreetisikta@gmail.com (Karubaki Preetisikta)

Published online at <http://journal.sapub.org/ijap>

Copyright © 2013 Scientific & Academic Publishing. All Rights Reserved

able to control the incidental learning but through planning can help enhance informal learning at work by implementing methods like coaching, mentoring, performance management, non course-based learning activities, etc.

Coaching is a method of training, directing or instructing a person or group of people to do a specific task, achieve a goal or develop certain skills. Mentoring is a relationship built on trust, and one of its primary goals is to make a young person (or persons new to a field of endeavor) more confident in their abilities and talents. Performance management is an ongoing, continuous process of communicating and clarifying job responsibilities, priorities and performance expectations in order to ensure mutual understanding between supervisor and employee. It is a philosophy which values and encourages employee development through a style of management which provides frequent feedback and fosters teamwork. Non course-based learning activities are programs that take employees out of context to a different setting and involve them in games and activities that allow them to acquire skills for better group and team performance as well and personal development. E-learning is another informal learning method. It allows learner more freedom and flexibility in choosing the content, time and the kind of study method they want. It increases scope of learning and gives the learner independence and accountability for his/her learning. These tools when used in organizations with a planned learning chart for each employee and department, allows for better performance and overall organization development.

A large part of informal learning is incidental. However, the organisation cannot control incidental learning by planning for it or setting goals. Thus, the current study will not be studying incidental learning as a part of informal learning. The focus of the study will be to see the effect of planned informal learning methods on the ROI of Training. The planned informal learning refers to a deliberate attempt by the management to set goals of learning through informal methods, and to facilitate the acquisition, practice and retention of learning. The methods of informal learning considered in this study are Mentoring, Coaching, Secondment, Communities of practice, Performance Support tools, e-learning (focusing on opportunity for employee's self directed learning) and Knowledge management systems which includes virtual knowledge sharing[9].

To achieve the highest possible transfer of learning, the informal learning structure should be such that it complements supports and sustains the formal learning structure. The synergy of informal and formal learning has been called the Learning Zone. According to Donald Clark 2006, "The learning zone is the convergence of formal and informal learning within a social context where the interests of the enterprise and individual meet." Training programs and informal methods are mediums to achieve that zone. However, adequate attention is not being focused on seeing how effective the training is or whether the learning environment and content is correlating to the learning goals of the organization.

To see whether any of these tools, methods, programs and endeavours are successful, the method of ROI, Return on Investment is done. It is a way to see the returns got from the investment made in the form of time, capital and effort. The returns expected are generally organization's profits, improved performance, better organization culture, effective behavioural changes and employee job satisfaction. Each training program and action taken towards employee learning should be evaluated in terms of the ROI to see if the efforts and resources put in delivered the expected results, and whether the results are truly favourable to individual and organization.

To examine a training program thoroughly, there is a 4 level model[10]. The evaluation has 4 components; reaction, knowledge, behaviour and organisation results. Training is evaluated on all four domains to see if it has been effective.

Unfortunately, in the cases where organisations do measure the ROI of the training, it is mostly done on the lower levels- Reaction of the employee and the Knowledge evaluation. A survey result that stated that 83% of the training courses are measured for participant reaction as opposed to 44% and 50% for business results and behaviour respectively[11]. This shows that most training programs are superficially evaluated.

The current study will focus on measuring the Return of Investment on training on behaviour. The goal will be to compare the return of investment for training across organisation with planned informal learning methods and organisations without. This will allow the investigator to see whether informal learning methods add value to the returns and help sustain the learning. To evaluate the behaviour and its changes among the employees of the organizations involved, the concept of Personal Effectiveness will be used. Personal Effectiveness given by Udai Pareek is understood in terms of self disclosure, openness to feedback and perceptiveness, and plays a crucial role in determining the organization's culture, communication and relationships at work, as well as the degree to which the individual is capable of contributing to his/her own, organization's and peers' growth. This concept is based on the Johari Window and it defines effectiveness types allowing the investigator to determine the current level of effectiveness of individuals as well as create a goal of what they should be.

1.1. Rationale of the Study

Training and Development are now an integral part of HR processes. However, there is a lack of integration between the academic and practical view of the process. Most organisations avoid doing a proper full scale evaluation of their learning and development programs. The efforts mostly are to capture the level 1 of ROI from Kirkpatrick's model, employee reaction; the immediate feedbacks to the program. A survey conducted by ASTD and i4cp showed that out of the 704 human resource professionals, only 18% respondents said that their organization measures the impact of training on ROI and less than half said that their organization measures behavioural impact[12].

This is a blind spot in understanding the extent of the contribution training makes to organisation's and individual's goals and growth. Although there are a plethora of theories arguing about the benefits of training and having diverse learning strategies in organisations, there are very limited studies that have explored the issue quantitatively, providing concrete evidence to support the theories. Thus, this study is to facilitate the practice of evaluating training programs and help organisations estimate the Return on Investment on Human capital, i.e. their employees.

Also, informal learning in Indian context has not been explored as a business research issue. Although there are several organisations that implement planned informal learning strategies, adequate research is not being conducted to see the impact of these on the learning environment or the overall performance in the organisation.

A study on informal and formal learning in organisations, [13] shows the Spending/Outcomes Paradox. This paradox talks off how in terms of expenditure, organizations spend 3 times more on formal training than informal, but the learning form informal methods is far more than formal. Thus, it is important to generate research that defines the balance point between formal and informal learning methods in organization where learning is maximised and cost minimised. By discovering how each contributes to organisation and to each other, the synergy of informal and formal learning can be achieved. This paper aims to aid and encourage this concept.

Thus, this study is to understand to what extent informal learning techniques influence the performance of the organisation, aid in transfer of learning, and also provide quantitative evidence of the contribution structured informal learning in organisations.

1.2. Aim

To study the impact of planned informal learning methods on the ROI of training.

1.3. Objectives

- a. To assess the changes in behaviour post training
- b. To study the impact of informal learning methods on the resulting ROI by comparing the data from two organizations; one with structured informal learning and the other without.

1.4. Hypothesis

a) There will be a significant change in the Personal Effectiveness of the employees of both organizations, post intervention.

b) Organisation with planned informal learning methods, Group 1 will have a greater change in their Personal Effectiveness scores than Group two, Organization without informal learning methods.

- i. Changes in Self Disclosure levels will be higher among employees of organization with informal learning.
- ii. Changes in Openness to Feedback will be higher among employees of organization with informal learning.

- iii. Changes in Perceptiveness levels will be higher among employees of organization with informal learning, as compared to employees of organization without informal learning.

2. Review of Literature

There are several studies elucidating the importance of informal learning. A study conducted by [14] evaluated the existing literature on the role informal learning plays at work and reviewed the best practices of the informal learning as well as to propose how to link informal learning to core business processes. The authors used a multi-layered qualitative methodology which included extensive review of literature and use of semi structured interviews with key informants from government departments and other organisations with a policy perspective on informal learning at work, interviews in four case study organisations, and a consultative seminar to discuss the project's provisional findings. Among the findings of this study, the key inference, taken from their case study on the National Health services (NHS) in London, was that the lack of recognition for informal learning results in some employees not valuing their expertise and so are less inclined to share their knowledge with T&D (Training and Development) which increases company's cost for external trainers as well as leads to wastage of internal intellectual resources.

Another finding of the same study provide evidence supporting the importance and contribution of informal learning practices to work and production. The study also points out that while in many organisations, employees recognise that majority of their competencies are informally learnt, the management fails to recognise informal learning as a valid asset to enhance.

The article *Fostering Workplace Learning: looking through the lens of apprenticeship* [15] argues about the need to evaluate and research the apprentice and mentor relationship that exist in various forms at work. The article emphasises the need to evaluate the coaching and mentoring technique to understand how people transform from novices to experts. The article highlights the implication of such research on understanding and identifying the various teaching techniques used daily, and comprehending the nature of learning in organisations.

With the recent recognition of informal learning as a major influence in organisations several researchers have conducted studies to enhance the informal learning and help organisations structure it to produce optimum results. Another research adapted a design based wherein the authors introduce the concept of knowledge maturing, and provide a design of a social media that takes into consideration the digital interactions in work contexts and aligns it with informal learning [16]. The study focuses on the impact of modern technology on the informal learning and provides a tool that specifically targets the informal learning call knowledge maturing. This study further supports the beliefs

that it is important to identify, evaluate and enhance informal learning techniques.

In another study, Work-learning in informal online communities: evolving spaces[17], the researchers investigated how workers engage in informal online communities for work-learning. The methodology used was qualitative. Semi structured interviews were used to gather data. The major findings from this study were that people used online communities to establish a degree of connection as well as learning, although not always successful. The study points out that while technology such as online communities, open new avenue for informal learning, they also pose several challenges which need to be controlled to ensure the learning goals are met. Thus, by proper evaluation of all learning methods managers can identify the advantages and obstacles that come with each so that they can create learning strategies accordingly.

According to a research paper, Current Learning Trends in Europe and the United States,[18], 'Cegos Group's research among companies operating in Europe shows that the greatest users of e-learning are managers and the under 35s and that employees are now stating a preference for e-learning and blended learning over traditional classroom / instructor led training.' It is also stated that, 'Despite the global economic slowdown, most companies across the world remain committed to investing in training. However, reduced budgets mean that less training is being delivered and different methods are being considered and used.'[18]. This paper clearly points out that there has been a shift from traditional classroom and formal learning to e-learning and now to informal learning methods like coaching, mentoring and on-the-job training, which are more cost effective and deliver equivalent results. The paper gives the statistics that indicate the expenditure on formal and e-learning is decreasing among companies due to economic conditions. However, these companies are not cutting down on Learning and Development, rather investing on more cost effective informal learning methods and tools that deliver better results. This paper also indicated how a large number of employees in Europe showed a preference for a comprehensive form of learning by using both the traditional classroom training, and e-learning and blended learning methods. 'While classroom learning is still the most popular method, used by 93% of employees, e-learning and blended learning are indeed rising in popularity and are used by around 40% of all employees. The UK and Spain are continuing to lead the way with more than 50% of employees using both techniques.'[18]. This paper also illustrates what the employees across Europe and USA prefer in learning. Through an in-depth survey carried out in March 2009 by Cegos Group on 2,355 employees and 485 HR directors / training managers, the following trends were identified:

- a) Learners want to see more technology-driven learning developed during the next three years and have a preference for e-learning and blended learning over classroom learning
- b) Employees are keener to embrace collaborative tools

like blogs, forums and wikis.

c) There is a gap between what employees like and want, and what HR professionals are actually planning to develop over the next three years

d) Half of employees across Europe want more e-learning and blended learning compared to 40% of HR professionals

e) 44% of employees want to see collaborative techniques developed compared to under a third (32%) of HR professionals

This indicates that while employees are showing greater flexibility and innovation in their learning styles, the HR is not keeping up. The evidence from this paper corroborates the idea of the current study of blending informal learning methods to enhance ROI from formal learning methods. This paper also indicates that employees show a preference for such learning environments. This paper, Current Trends in in Europe and the United States, was written on the basis of research conducted by the Cegos Group, a global leader in Professional education. The research methods used are mostly surveys, feedback, and interviews. The methodology of this paper is quantitative and it also emphasises the need to quantify the benefits reaped by individuals through different learning tools used i.e. the ROI.

There is a study that took a different approach to studying informal learning at work than the articles previously examined[19]. This research used mixed research methodology. The first part of the study was a randomised controlled trial (RCT) and the second part of the study used semi-structured interviews and thematic analysis. The RCT element of the study involved participants being randomly allocated to one of two learning groups. In the first group participants were trained by driving instructors trained in coaching skills using a blended method of coaching and instruction. In the second group participants were trained by driving instructors using solely an instruction approach. In total 208 participants took part with 24 driving instructors delivering the coaching or instruction across the two groups. In the qualitative part of the research, four driving instructors and seven learners were interviewed using semi-structured interviews and the data analysed using thematic analysis.

The study sought to explore the impact of coaching as a learning methodology and to compare this with an instruction-based approach[19]. The results of the study showed the effectiveness of coaching, an informal learning method, in empirical as well as in qualitative terms. Both qualitative and quantitative results indicated that coaching was more effective and efficient method of learning than formal classroom training. With this concept applied to work, there is a possibility that informal learning methods used by the management can aid overcome several shortcomings of formal training.

A research conducted to see how managers develop proficiency in managerial skills and gain competencies, 'Informal learning and the transfer of learning: How managers develop proficiency'[20], indicated that managers with high competence but who had low peer, supervisory and

organisational support, often learnt through informal channels and transferred learning more frequently. In this research paper 'New perspectives are offered on the interrelationship between informal learning and transfer of learning, the role of meta-cognition and self-regulation in informal learning, and the influence of informal learning in the development of managerial proficiency.'. Thus, once again pointing out how informal learning forms the 90% of the learning iceberg and should be harnessed by organisations. The study also indicates that in the absence of good formal training opportunities, informal learning methods still make monumental contribution to employees whether it is consciously or unconsciously learnt.

Another empirical study to support the effectiveness of informal methods examined whether or not peer mentoring facilitates organizational knowledge sharing using an empirical test.[21] This test also indicated a significant relationship between peer mentoring and knowledge creation in an organization. Thereby, providing evidence of the various benefits of informal learning methods in an organisation.

A survey based research indicated that for knowledge workers, informal learning was three times more important for gaining professional proficiency than formal training[22]. This study indicated that the learning impact of on-the-job experience is 40%, mentor 35% and formal training only 10%. In a comparison between learning impact of formal and informal learning methods, informal learning methods made 87% impact on overall worker's learning.

Since the current study is utilising ROI, return of investment as a key indicator of the effectiveness of the formal learning technique, Behavioural training and Informal learning in an organisation, it is important to explore research examining the concept of ROI. The rationale for conducting an ROI on training is to generate evidence of the effectiveness of the program as well as of the profitability of the investment and suggests the use of Donald Kirkpatrick's model[23]. This study also provides the HRD professionals with empirical evidence of the priority of each component of the model and gives a basis for decision making while selecting an evaluation method for training programs.

A ROI study conducted on the leadership program, Southern Extension Leadership Development (SELD) showed that for every \$1 spent on the program \$3.86 in benefits are realised, and the ROI was 286%[24]. This shows how behavioural training is extremely crucial to an organization's productivity. The same study also states, with empirical evidence that such programs also impact employee turnover. Thus, organizations should invest in relevant and effective behavioural programs, and measure the ROI to understand the net worth and contribution the training makes to the organization both at a behavioural and business level.

Another[25] quantitative study explores the possibility of combining social networking and learning theories. It examines 'the importance and the possible advantage of combining formal and informal learning. The analysis

suggests that initiatives rooted in formal learning approaches alone do not necessarily lead to the creation of long-term grounded internal safety networks, and that patient safety improvements can crucially depend on bottom-up initiatives of communities of practice and informal learning.'[25]. This paper suggests that bottom-up initiatives and a combination of formal and informal learning can make a major contribute to patient safety improvements.

A study, Personal effectiveness as a function of psychological androgyny used Udai Pareek's Personal Effectiveness Scale with Bem Sex Role Inventory to see whether sex roles and stereotypical masculine traits made for more effective managers[26]. The result was that psychologically Androgynous group was found to be most personally effective on the dimensions of self-disclosure, benefit from feedback & perceptiveness or sensitivity to others' feelings. Also, significant correlation existed between Psychological Androgyny and Personal Effectiveness vis-à-vis the other sex-role orientations. This shows that the Personal Effectiveness scale shows individual's effectiveness regardless of gender and in fact is secular in measurement. This also indicates that PE scale is a good measure for finding out an employee's effectiveness and determining the various factors contributing to it.

According to a study on the dynamics of Personal Effectiveness and Team Effectiveness, found that the Personal effectiveness of employees contributes to team effectiveness and PE scale correlates highly to performance of employees and teams in several Multinational companies like Apex, Sky, Zenith and IMG[27]. This suggests that PE scale is ideally suited for the purpose of the study and is valid to measure the success of the learning goals of behavioural training, making it suitable to use as a tool for measuring ROI.

3. Methodology

3.1. Operational Definition

a) Planned Informal Learning Methods- The planned informal learning methods refers to deliberate attempts by the management to set goals of learning through informal methods, and to facilitate the acquisition, practice and retention of learning. This does not include incidental learning.

b) Return on Investment- the benefits the organisation or individual reaps for making an investment in terms of money, time and effort is called the Return on investment. With respect to a training program the ROI is 4 fold; reaction of participants, knowledge, behaviour and business results. The Behaviour domain of the ROI is marked by employees displaying and practicing behaviours that formed a part of the initial learning goals of training.

c) Personal Effectiveness – is the individual's ability to perform and deliver results, have good relationships and contribute to one's own and group's goals. It is understood

with respect to self disclosure, openness to feedback and perceptiveness.

3.2. Variables

a) Independent variable:

a. informal learning methods- ; Mentoring, Coaching, Secondment, Communities of practice, Performance Support tools, e-learning (focusing on opportunity for employee's self directed learning) and Knowledge management systems

b) Dependent:

- a. ROI of training
- i. Personal Effectiveness Score (behaviour)

3.3. Design

The current study is a quantitative approach that utilises the pre and post design to study the affect of independent variable on the dependent variables.

3.4. Sample

i. **Universe-** Organisations that undergo training with the aim of influencing employee behaviour at workplace.

ii. **Sample size-**the sample size is set to be 40 participants, evenly divided between organisation with informal learning methods and organisation without. Each organisation with 20 participants.

3.5. Inclusion Criteria

- a) Employees exposed to a common training program and trainer.
- b) Employees who are receiving a training program of such nature for the first time.
- c) Organisations with training programs for changing employee behaviour at work.
- d) Employees in middle management level and below.
- e) Employees with minimum 6 months of work experience in the same organisation.
- f) Employees with minimum educational qualification of a bachelor's degree.

3.6. Exclusion Criteria

- a) Top management level
- b) Employees with more than 3years of experience in the same organisation.
- c) Lower level employees
- d) Organisations with a different trainer.
- e) Organisations employing same trainer but with a different training content.

3.7. Sampling Method

The method selected for the purpose of this study is purposive sampling. The author will deliberately select organisations so as to control variables like the trainer and training content. Also the sample needs to be evenly divided between organisations with planned informal learning methods and organisations without, so as to clearly see the

difference in the Return on Investment of training in the two types of organisations.

Table 1. showing sample characteristics

Total no. of participants		41
No. of employees in Group 1 (organization with informal learning)		20
No. of employees in Group 2 (organization without informal learning)		21
Gender	males	28
	females	13
Sector		I.T.
Average age		32.8 years
Average Work experience		2 years
Employee Grade		Middle management level

3.8. Tools for Data Collection

- a) Participant detail schedule form
- b) Individual Consent form

c) **Personal Effectiveness Scale(1)** -Personal effectiveness is a measure of what effect you have on others as a person. This scale gives Personal Effectiveness types in terms of disclosure, openness to feedback and perceptiveness. Personal effectiveness depends on the individual's openness to share and communicate, an individual's self awareness, how one receives feedback and perceptiveness.

This tool has been designed to explore behaviour and feelings when individuals interact with people. It contains 15 statements, 5 statements each for the three domains mentioned. Each statement is to be rated on a five point scale, ranging from 0 to 4. 0 is to be allocated to the statement the participant feels never happens or is a seldom feels or behaves this way, 1 for not true or occasionally feels or behaves this way, 2 for somewhat true, 3 for fairly true or quite often feels or behaves this way, and 4 for most characteristic or always feels or behaves this way. The scoring is done by using the key provided. Each dimension is scored separately by entering the score of corresponding statement in the table. For certain statements, the rating given by the participant is reversed while scoring. The total score for each domain, disclosure, openness to feedback and perceptiveness, is thus derived for each subject.

This scale is being used to see the change in participants post training in terms of their interpersonal behaviour at work. The higher an individual's personal effectiveness, the greater the chance is that he/she contributes positively to work relations and dynamics and aids in the creation of a healthy peersupport system that facilitates productivity. This was done by collating the results of each organization on SPSS, and with the help of GLM repeated measures, the values of pre and post intervention are compared for getting results on whether there is a difference in the scores of the pre intervention and post intervention administration of the test as well as the difference in the changes seen between the two organizations. Thus, the scores for within and between organizations were derived.

- i. Reliability of this scale is 0.90 using Cronbach's

coefficient alpha. The sample for this was a group of 30 health managers.[1]

ii. The scale has sufficient validity and is standardised for Indian population.

iii. Scoring is done using the scoring key and the norms given in the manual.

Table 2. shows the norms provided by Udai Pareek

Dimension	Mean	SD
Self Disclosure	12	3
Openness to Feedback	10	3
Perceptiveness	10	3

3.9. Procedure for Data Collection

The data collection for the current study was conducted in two phases to provide a thorough understanding of the impact independent variable has on the dependent variable.

The phase I consisted of getting the organisation to sign a consent form and then the administering PE, Personal Effectiveness Scale(1) on the trainees for the first time before the training session, and then evaluating the reaction of the trainees to the training.

The phase II, conducted after 15 days, involved the administration of PE scale for the second time. This allowed the investigator to see the possible effect of training on the trainee's PE score post training.

The test was a paper pencil test. The participants were made aware of the purpose of the test as well as the study. All queries regarding the methodology and assessment of the test was clarified to the subjects and individual scores were conveyed to them via email.

3.10. Data Analysis

The data on organisations was first classified under two categories; Group 1-organisations with planned informal learning methods and Group 2-organisations without. The results were then tabulated on pre and post training basis. Therefore, two types of results were gotten. The first type of results is 'Within' subjects, a comparison of the change between pre and post scores for all candidates and second, 'Between' subjects, a comparison of the two groups that is organizations with informal learning methods and organization without.

To calculate the change in behavioural component due to training, the change in the scores of each dimension of the PE scale for each participant was estimated on the basis of the data collected in the first and second phases. This data was compared between the two groups to see if there is a greater change in organizations with informal learning.

The author used GLM Repeated Measures ANOVA to obtain data for the variables of behaviour to compare the results of pre and post test across organisation with informal learning and organisations without. A repeated measure ANOVA was used when all members of a random sample are measured under a number of different conditions. This provided both data for within subjects factors, significance

of difference in Pre and Post scores for all participants to see if change occurs as well as gave the between subject analysis showing the comparison amongst the two groups taken for the study to see if one group shows greater change.

4. Ethical Considerations

Certain ethical principles and issues will be taken into consideration with respect to the study being conducted such as:

- Informed Consent form will be provided to the participant.
- Confidentiality of the information and anonymity of the subject and organization unless otherwise specified.
- Information would be used only for research and no other purpose.
- Participants have the right to participate (if they meet the criteria) and drop out of the study at any point.
- Participants have the right to debriefing and exclusive right to access the results after the study has been completed.

5. Results

The results are in two parts. The first part, based on the first hypothesis displays data regarding the changes in the behaviour among all the participants of the test. The data shown is for within subject comparison and provides the comparison of the scores pre and post intervention. According to the first hypothesis, there will be a change in the behaviour of the employee post training regardless of which group they belong to.

The second part comprises of between subjects comparison. According to the second hypothesis, the employees of organization with informal learning will show a greater change in behaviour post intervention as compared to employees in organization without informal learning methods. To check this, between subjects comparison will provide ANOVA values.

Table 3. showing Descriptive Statistics for Within Subject Comparisons

Variable	N	Mean	Std. Deviation
SDPre	41	11.2195	3.88273
O2FPre	41	13.6098	3.16131
PercPre	41	11.6098	3.20841
SDPost	41	12.6098	3.04038
O2FPost	41	14.5122	2.58961
PercPost	41	12.7561	2.71828

• SDPre refers to Self disclosure scores during pre intervention administration, SDPost is Self disclosure score post intervention

• O2FPre and O2FPost stand for Openness to feedback pre scores and Openness to Feedback post scores respectively.

• PercPre and PercPost stand for Perceptiveness pre scores and Perceptiveness post scores respectively.

The table 3 shows the descriptive statistics for all the variable, pre and post. The mean scores for the variables Self Disclosure (SD), Openness to Feedback (O2F) and Perceptiveness (Perc) pre- training are 11.21, 13.609, and 11.60 respectively. Post training the Self Disclosure (SD), Openness to Feedback (O2F) and Perceptiveness (Perc) scores changed to 12.60, 14.51 and 12.75. This indicates that there has been an increase in the scores and consequently a change in behaviour.

Table 4. shows the Multivariate results for the Within Subject Factors

Within Subjects Effect		F	Hypothesis df	Error df
TIME	Pillai's Trace	11.857**	3.000	37.000

a Exact statistic

** significant at 0.01 level

Within Subjects Design: TIME

The above table indicates the result of the within variable analysis. It shows that with respect to time, 2 weeks, with F value being 11.857 significant at 0.01 level, there has been a significant change in the scores of all participants. This indicates that the intervention, formal training session caused a real change in the behaviour of the participants. Overall, from table 3 and 4, one can conclude that significant positive

change was observed in the behaviour of the participants from both organizations.

Table 5. shows the Test of Within Subject Contrasts

Source	Measure	TIME	df	F
TIME	SD	Linear	1	20.686**
	O2F	Linear	1	10.339*
	PERC	Linear	1	24.100**

** significant at 0.01 level

* significant at 0.05 level

The Table 5 indicates that there has been a significant change in all three dimensions; Self Disclosure, Openness to Feedback and Perceptiveness with respect to time. This is true for all participants regardless of which group they belong to.

Change in Self Disclosure is significant at .000 and F value is 20.68 with df 1. Openness to Feedback is significant at .003 with F value 10.33 and df 1. Perceptiveness is significant at .000 level with F value 24.1 and df 1.

This means the first hypothesis is accepted and true, that post intervention, i.e. formal training, there is a significant change in the Personal Effectiveness of the subjects. Thus, the formal training was successful in change in behaviour of employees of both organizations. This indicates to a Positive ROI; Return on Investment for the behavioural training.

Table 6. showing the Descriptive Statistics for Between Subject analysis

	Organization	Mean	Std. Deviation	N
SDPre	With Informal Learning Methods	11.2000	3.56297	20
	Without Informal Learning Methods	11.2381	4.25329	21
	Total	11.2195	3.88273	41
SDPost	With Informal Learning Methods	12.6500	2.77726	20
	Without Informal Learning Methods	12.5714	3.34023	21
	Total	12.6098	3.04038	41
O2FPre	With Informal Learning Methods	13.4000	3.15228	20
	Without Informal Learning Methods	13.8095	3.23449	21
	Total	13.6098	3.16131	41
O2FPost	With Informal Learning Methods	14.2000	2.91277	20
	Without Informal Learning Methods	14.8095	2.27198	21
	Total	14.5122	2.58961	41
PercPre	With Informal Learning Methods	10.9000	3.35449	20
	Without Informal Learning Methods	12.2857	2.98568	21
	Total	11.6098	3.20841	41
PercPost	With Informal Learning Methods	12.6000	2.79850	20
	Without Informal Learning Methods	12.9048	2.70009	21
	Total	12.7561	2.71828	41

- SDPre refers to Self disclosure scores during pre intervention administration, SDPost is Self disclosure score post intervention

- O2FPre and O2FPost stand for Openness to feedback pre scores and Openness to Feedback post scores respectively.

- PercPre and PercPost stand for Perceptiveness pre scores and Perceptiveness post scores respectively.

Post data analysis, the mean scores of the two groups, organizations with informal learning and organizations without informal learning were more or less the same for every dimension. As seen from table 3, the Self Disclosure Pre-intervention mean scores for organization with informal learning was 11.2, while the scores for organizations without informal learning was 11.23. The Pre intervention scores for Openness to Feedback for organization with informal learning and organization without was 13.4 and 13.8. The Pre Perceptiveness scores of organization with informal learning and organization without are 10.9 and 12.28 respectively. Perceptiveness was the only dimension the two groups differed with respect to pre intervention scores. The Post-intervention results of Self disclosure for organization with informal learning and organization without came to be 12.6 and 12.5 respectively. The scores for Openness to feedback increased for organization with informal learning and organization without to 14.2 and 14.8 respectively. For Perceptiveness, the organization with informal learning experienced increase in their scores to 12.6 while the organization without informal learning practices showed only a minor change to 12.9.

Table 7. shows the Test of Between Subject Factors

Source	Measure	df	Mean Square	F
Organization	SD	1	.008	.000
	O2F	1	5.319	.346
	PERC	1	14.637	.889

The table 7 indicates that when a comparison is drawn between the two groups, organizations with informal learning and organizations without informal learning techniques, there is no significant difference seen. This leads to the rejection of the second hypothesis that organisation with planned informal learning methods, Group 1 will have a greater change in their Personal Effectiveness scores than Group two, Organization without informal learning methods.

6. Discussion

It was hypothesised that there will be a significant change in the Personal Effectiveness of the employees of both organizations, post intervention. Referring to the results in table 3 and 4, this hypothesis is accepted. In all three dimensions, the employees of both organizations showed a significant change, with F value 11.857, in their Personal Effectiveness which is a measure of behaviour.

This favourable result could be attributed to receptive

learners, good and effective trainer, and training content. The success of a training program in changing behaviour in the direction wanted is to a large extent the direct result of the trainer's style and capabilities. The favourable result of within subject test indicates that the trainer used for the purpose of the study was effective.

The second hypothesis of the current study, Organisation with planned informal learning methods, Group 1 will have a greater change in their Personal Effectiveness scores than Group two, Organization without informal learning methods is rejected. The data was insignificant for a difference in the degree of change between the two groups taken, organizations with informal learning and organization without informal learning.

Since literature review for this concept all indicate that informal learning makes a significant difference in learning, the lack of significance or rejection of the second hypothesis could be attributed to factors like research limitation, and ineffective administration of informal learning techniques. In research limitations, variable of time is the most significant issue. The author provided for only 2 weeks time to see the change in behaviour post training, while literature review suggests that to study the effects of informal learning techniques one must do a longitudinal study. Second reason the results are unfavourable could be because the organization considered for having informal learning techniques could possibly not be properly implementing the methods and may have an ineffective way of putting informal learning tools to use. This may result in these tools not contributing to learning amongst employees as much as it should or can. Third, reason could be person characteristics and other internal factors of the individuals in the two organizations taken could have contributed to their results. If the employees at the organization without informal learning methods are highly motivated to learn and have a positive attitude towards change, then they will show either as much or greater degree of change in behaviour post intervention as other groups with the advantage of informal learning tactics.

7. Summary

The current study aimed to study the impact planned informal learning methods have on the Return of Investment of Training. The objective of the study was to see if there is a change in behaviour of employees in organizations post training and second, if there is a higher degree of change among the employees of an organization that uses planned informal learning at work place.

7.1. The Following are the Hypothesis of the Study

a) There will be a significant change in the Personal Effectiveness of the employees of both organizations, post intervention.

b) Organisation with planned informal learning methods, Group 1 will have a greater change in their Personal Effectiveness scores than Group two, Organization without

informal learning methods.

7.2. The Sample

The sample for the study included middle management and lower level employees of two organizations. The two organizations were purposefully chosen; Group one being from the Organization with informal learning and Group two being from Organization without any planned informal learning at work. There were a total of 41 participants, 20 in Group 1 and 21 in Group 2.

7.3. Measures

To measure the behaviour of the participants, Personal Effectiveness Scale by Udai Pareek was used. It has three dimensions, Self Disclosure, Openness to Feedback and Perceptiveness. These dimensions provide a profile of the individual based on their behaviour with regards to others. Since interaction styles with others impact work performance to a large extent this tool was taken to measure the behavioural component of ROI of Training.

7.4. Results

The results of the study were that there was a significant change seen in the behaviour of the employees of both organizations post the training. The F value was 11.857 significant at 0.01 level indicating that the intervention i.e. the training successfully changed the behaviour of the employees and gave positive ROI. This led to the accepting of the first hypothesis that there will be a significant change in the Personal Effectiveness of the employees of both organizations, post intervention.

However, the second hypothesis was rejected as the data was insignificant regarding the difference in the degree of change in behaviour seen between the two groups taken, i.e. organization with structured informal learning and organization without structured informal learning.

7.5. Limitations of the Study

Time was a major factor that may have compromised the results of the study. As seen in many studies, informal learning is studied longitudinally to assess its impact.

7.6. Implications of the Research

a) This study suggests that it is possible to calculate and conclusively see the impact on behaviour of training programs, implying that more organizations should focus on this aspect of ROI than just reaction and knowledge.

b) This study also highlights the need to study the impact of informal learning methods with a longitudinal approach as short term studies cannot conclusively suggest its effect on overall learning.

c) The study also highlights the need to have a mixed approach at studying the ROI of training as well as impact of learning methods, as the factors of success and failure for both formal training and Informal learning methods cannot be directly derived from empirical tools and require the aid of qualitative investigation.

7.7. Suggestions for Further Research

a) a study with a more mixed approach, combining the quantitative and qualitative methods would provide a more in depth analysis of how and why informal learning benefits individuals at work.

b) A study done over a longer period of time, maybe from one to 5 years would give a concrete proof of whether informal learning impacts the ROI of formal training or not.

c) The ROI can be studied in all four dimensions given by Kirkpatrick, Reaction, Knowledge, Behaviour, and Organizational results. This can be studied across industries, among companies with varying business and cultures approaches to see what is most effective for learning and growth at both individual and organization levels.

ACKNOWLEDGEMENTS

I would like to thank Dr. Padma Kumari for her able and patient supervision of my dissertation. Without her guidance this endeavour would not have been possible. I acknowledge and thank Mr. Jacob Isaac, Ms. Soumya Gowda and Mr. Nishant Kapur for their support and assistance in data collection as well as guidance. I thank the management and the participants of the research from both the organizations for their time and cooperation. I sincerely appreciate and am grateful for the contribution each has made to the study.

Scale Used- Personal Effectiveness Scale(1)

Personal Effectiveness: Personal Effectiveness (PE) Scale

THE INSTRUMENT AND ITS ADMINISTRATION

The PE scale gives personal effectiveness types in terms of self-disclosure, feedback and perceptiveness. It contains 15 statements, five for each of the three aspects. A respondent checks each statement, indicating the extent to which it is true of him or her (on a 5-point scale). This instrument is self-administered.

CONCEPTUAL FRAMEWORK

Building on Johari Window (known/not known to self, and known/not known to others), a third dimension of effectiveness has also been added. The conceptual framework is given in Chapter 5, Section 1b.

SCORING

The ratings are transferred to the score sheet (appended). The total scores on openness, feedback and perceptiveness are given, each ranging from 0 to 20. The score 11 can be used as the cut-off point for classifying the scores, on each of the three aspects, as low and high. The respondent marks the appropriate category (one out of eight) given on part B of the score sheet, which is his effectiveness type.

RELIABILITY

Alpha for a group of 24 health managers was found to be 0.90.

NORMS

Mean and SD values based on responses of 50 managers are given below.

Variable	Mean	SD
Self-disclosure	12	3
Openness to feedback	10	3
Perceptiveness	10	3

USE FOR HRD

An exercise can be conducted by asking each group member to identify himself with one (or with the closest one) of the eight types mentioned in B of the scoresheet. Similarly, another exercise can be conducted, asking every member in the group to identify every other member with one (or the one closest to it) of the eight types. Data thus generated can be used in the process work in helping individuals take the necessary steps to increase their personal effectiveness by experimenting with openness, and empathic functional feedback. The actual scores can then be calculated, and the discrepancies between self-perceived or group-perceived profile and the score profile can be discussed. Small groups (preferably triads) can work on helping each other to improve effectiveness by increasing scores in deficient areas.

PERSONAL EFFECTIVENESS SCALE**Score Sheet**

A. Enter your responses below after reversing (*) marked ones.

Original responses	0	1	2	3	4
Reversed responses	4	3	2	1	0

Item	Response	Item	Response	Item	Response
*1.	...	2.	...	*3.	...
*4.	...	*5.	...	*6.	...
7.	...	8.	...	9.	...
*10.	...	*11.	...	*12.	...
13.	...	14.	...	*15.	...
Total
Self-disclosure		Openness to feedback		Perceptiveness	

B. Write L or H below each of the three total scores; if the total score is 11 or below, write L; if the score is above 11 write H.

Mark one category, out of the eight given below, based on the combination of your three totals. This is your effectiveness type.

Category	Self-disclosure	Openness to feedback	Perceptiveness
1. Effective	High	High	High
2. Insensitive	High	High	Low
3. Egocentric	High	Low	Low
4. Dogmatic	High	Low	High
5. Secretive	Low	High	High
6. Task-obsessed	Low	High	Low
7. Lonely Empathic	Low	Low	High
8. Ineffective	Low	Low	Low

C. Look in A at items on which you have a response of 2 or below. Develop your own action plan to change your behaviour to become more effective.

PERSONAL EFFECTIVENESS SCALE (G)

Name:

Role:

Organisation:

Date:

This instrument is for your own use. So, be frank in your responses.

Read each statement given below and indicate on the left-hand blank space how much it is true of your behaviour, by using the following guidelines:

Write 4 if it is most characteristic of you, or if you always or most often behave or feel this way.

Write 3 if it is fairly true of you, or you quite often behave or feel this way.

Write 2 if it is somewhat true in your case.

Write 1 if it is not true of you, or if you only occasionally feel or behave this way.

Write 0 if it is not at all characteristic of you, or you seldom feel or behave this way.

- 1. I find it difficult to be frank with people unless I know them very well.
- 2. I listen carefully to others' opinions about my behaviour.
- 3. I tend to say things that turn out to be out of place.
- 4. Generally, I hesitate to express my feelings to others.
- 5. When someone directly tells me how he feels about my behaviour, I tend to close up and stop listening.
- 6. On hindsight, I regret why I said something tactlessly.
- 7. I express my opinions in a group or to a person without hesitation.
- 8. I take steps to find out how my behaviour has been perceived by the person with whom I have been interacting.
- 9. I deliberately observe how a person will take what I am going to tell him, and accordingly communicate to him.
- 10. When someone discusses his problems, I do not spontaneously share my experiences and personal problems, of a similar nature with him.
- 11. If someone criticises me, I hear him at that time but do not bother myself about it later.
- 12. I fail to pick up cues about others' feelings and reactions when I am involved in an argument or a conversation.
- 13. I enjoy talking with others about my personal concerns and matters.
- 14. I value what people have to say about my style, behaviour, etc.
- 15. I am often surprised to discover (or told) that people were put off, bored or annoyed when I thought they were enjoying interacting with me.

REFERENCES

- [1] Pareek, Udai. *Training Instruments in HRD and OD*. 2. s.l.: Tata McGraw-Hill, 2000.
- [2] *The Concept of The 'Learning Organisation' Applied to the Transformation of the Public Sector*. Finger, M. and Brand, S. B.[ed.] M. Easterby-Smith, L. Araujo and J. Burgoyne. London: Sage, 1999, Organisational Learning and The Learning Organisation .
- [3] Senge, P. *The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organisation*. 1994.
- [4] *Learning and Teaching in Primary Schools: insights from TLRP*. James, M. and Pollard, A. Cambridge: s.n., 2008, Cambridge University Primary Review.
- [5] Marsick, V. J. and Watkins, K. E. *Informal and Incidental Learning in the Workplace*. London and New York : Routledge, 1990.
- [6] *Towards a Theory of Informal Learning in Organisations*. Marsick, V. J. and Watkin, K. E. 4, 1992, International Journal of Lifelong Education, Vol. 11, pp. 287-300.
- [7] Clark, Donald. *Convergence Learning Learning Circuits*. [Online] 2006. <http://learningcircuits.blogspot.in/2006/12/convergence-learning.html>.
- [8] *Informal learning in the workplace*. Eraut, Michael. No. 2, Brighton: Carfax Publishing, July 2004, Studies in Continuing Education, Vols. Vol. 26,.
- [9] Mattox II, John R. *Measuring the Effectiveness of Informal Learning Methodologies*. s.l.: The American Society for Training and Development (ASTD), 2012.
- [10] Kirkpatrick, Donald. *Evaluating Training Programs*. 3. s.l. : Berrett-Koehler Publishers, 1994.
- [11] *Training Evaluation - Industry report: Who's Learning What?* s.l.: The Training Magazine, 1996. p. 63.
- [12] *Overcoming Barriers and Valuing Evaluation*. Patel, Laleh. s.l.: American Society for Training and Development, February 14, 2010, T&D Magazine.
- [13] Cross, Jay. *Informal Learning: Rediscovering the Natural Pathways that Inspire Innovation*. San Francisco: Pfeiffer, 2007.
- [14] *The Impact of Informal Learning at Work on Business Productivity*. Fuller, Alison, et al., et al. s.l.: DTI, September 2003, Department for Trade and Industry.
- [15] *Fostering Workplace Learning: looking through the lens of apprenticeship*. Fuller, Allison and Unwin, Lorna. 1, 2003, European Education Research Journal, Vol. 2, pp. 41-55.
- [16] *Designing Social Media for Informal Learning and Knowledge Maturing in the Digital Workplace*. Ravenscroft, A., et al., et al. 3, s.l.: Blackwell Publishing, June 2012, Journal of Computer Assisted Learning, Vol. 28, pp. 235-249.
- [17] Thompson and Lynn, Terrie. *Work-learning in informal online communities: evolving spaces*. 2011. Information Technology & People, Vol. 24.
- [18] *Current learning trends in Europe and the United States*. Blain, J. 2009, Cegos July .
- [19] *Coaching as a learning methodology - a mixed methods study in driver development using a randomised controlled trial and thematic analysis*. Passmore, Jonathan and Rehman, Hannah. 2, 2012, International Coaching Psychology Review, Vol. 7, pp. 166-184.
- [20] *Informal learning and the transfer of learning: How managers develop proficiency*. Enos, Michael D., Kehrhahn, Marijke Thamm and Bell, Alexandra. 4, 2003, Human Resource Development Quarterly, Vol. 14, pp. 369-387.
- [21] *Impact of Peer Mentor Training on Creating and Sharing Organizational Knowledge*. Bryant, Scott E. and Terborg, James R. 1, 2008, Journal of Managerial Issues, Vol. 20, pp. 11-29.
- [22] *Trends in Workplace Learning*. CapitalWorks. 2010, Journal of Human Resource Development.
- [23] *AN EMPIRICAL STUDY OF THE TRAINING EVALUATION DECISION-MAKING MODEL TO MEASURE TRAINING OUTCOME*. HUNG, TSANG-KAI. 1, 2010, Social Behavior & Personality: An International Journal, Vol. 38, pp. p87-101.
- [24] *LEADERSHIP DEVELOPMENT: RETURN ON INVESTMENT - CALCULATING THE MONETARY VALUE OF THE MANAGERIAL ASSESSMENT OF PROFICIENCY PROGRAM FOR THE GEORGIA EXTENSION SYSTEM*. Rohs, F. R. 1997.
- [25] *Improving patient safety through formal and informal learning networks*. Melo, Sara and Beck, Matthias. 2011, The York Management School Journal.
- [26] *Personal effectiveness as a function of psychological androgyny*. Maheshwar, i N. and Kumar, V. 1, 2008, Industrial Psychiatry Journal, Vol. 17, pp. 39-45.
- [27] *Dynamics of Personal Effectiveness and Team Effectiveness*. Chabungham, Paramananda. March 2012, HRToday, Vol. 1.
- [28] Thalheimer, Will. *How Much Do People Forget?* [Online] December Tuesday, 2010. <http://www.willatworklearning.com/2010/12/how-much-do-people-forget.html>.
- [29] *The Learning Organization*. Smith, M. K. 2001, The Encyclopaedia of Informal Learning
- [30] *Informal Learning in Schools and Colleges*. Smith, M. K. 2002; 2009, The Encyclopaedia of Informal Education.
- [31] Pavlov, Ivan. *Conditioned Reflexes: An Investigation of the Physiological Activity of the Cerebral Cortex*. [trans.] G. V. Anrep. London: Oxford University Press, 1927.
- [32] Matt Lattal, PhD. *Extinction and the Erasure of Memories*. *American Psychological Association*. [Online] 2011. <http://www.apa.org/science/about/psa/2007/12/lattal.aspx>.
- [33] Fitz-enz, Jac. *The ROI of Human Capital: Measuring the Economic Value of Employee Performance*. 1. s.l. : AMACOM, 2000.
- [34] Ebbinghaus, Hermann. *Memory: A Contribution to Experimental Psychology*. [trans.] Henry A. Ruger and Clara E Bussenius. 1885.
- [35] *Permanent Effects of Punishment During Extinction*. Boe, Erling E. and Church, Russell M. 3, June 1967, Journal Of Comparative and Physiological Psychology, Vol. 63, pp. 486-492.