

A Study on the Impact of Demographic Variables on Factors That Affect Informal Learning

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Abstract

The increasing advancement in technology and the need for continual improvement of performance demand more efficient practices of learning at workplace. This paper therefore aims to study the factors that influence informal learning and how the demographic variables affect them. The data was collected by administering questionnaires to IT professionals at Coimbatore based on which the analysis was carried out. The analysis included exploring the study constructs and investigating if the demographic variables affect the study constructs. The findings revealed that among formal learning and informal learning, the latter contributed more towards workplace learning and demographic variables did not have a considerable effect on the study constructs. Therefore, both the organization and the individual can consider investing more time and effort towards informal learning activities.

Key words:

Formal learning, informal learning, workplace learning.

Introduction

With increasing advancement in the technology, workplace learning is gaining more importance, especially in the corporate world. There arises a need to learn, unlearn and relearn for the employees to remain competitive and stay up to date with the upcoming technology. At the workplace, learning occurs through formal activities and through informal learning activities which are known to provide learning through everyday work activities.

Over the past few years, the workplace has been increasingly considered as an appropriate environment for learning work related skills and knowledge, which enables workers to participate more effectively in ever-changing work environments. Studies suggest that most of work related learning occurs through experience and through other activities in an informal context rather than through the course curriculum model. While formal and more structured approaches to workplace training tend to be more visible to workplace decision makers, few understand the importance of informal learning and even fewer actively support it and use it to reinforce more formal, structured training. It is imperative that organizations of all sizes find innovative and practical ways to support employee's informal learning.

Informal learning is not usually structured or intentional from the employees' point of view. It occurs outside the realm of traditional instructor-led programs and is widely used in the context of corporate training and education in relation to return on investment (ROI), or return on learning (ROL). It is more suited for people who need to add information to an already existing body of

knowledge, people who like unstructured learning, like to find out things for themselves and make the connections with the knowledge they already have.

Creating informal learning situations is less costly and more time efficient considering the social media technologies and other electronic devices. Learning informally can be less intimidating for some while subject matter experts may be more willing to share their knowledge this way. Since learning this way happens more naturally during the flow of someone's work day, employees may be less likely to resist learning new things.

Informal learning may be intentional or accidental. Intentional as learning can occur by an individual locating and "pulling" down information to find out how to solve a particular problem, or by asking for help from their network of trusted colleagues. Accidental, as learning occurs without consciously realizing it. This is also known as incidental or random learning, or even "learning at the water cooler" and this is where employees arrive at solutions in conversations or as a by-product of another activity.

Review of Literature

The way people behave, make decisions, and communicate is largely influenced by their personal characteristics (Gregorc, 1982; Hirsh and Kummerow, 1990). Therefore, personal factors such as age and educational background may influence their degree of engagement in informal learning.

In Tikkanen's (2002) and Kremer's (2005) studies, less experienced, younger workers reported engaging in more informal learning, while more experienced, older workers were less likely to engage in informal learning activities and tended to view their informal learning as being less embedded in the work. However, the findings reported in Livingstone's (2000) study of informal learning in Canada contradict these suggestions – older participants in his study reported engaging in as much informal learning as did younger participants. Livingstone (2001) also discovered that younger participants tended to look to others as sources of information in informal learning, whereas older learners tended to engage in more individualistic activities.

Berg & Chyung (2008) studied about the differences in informal learning engagement based on gender, age and highest level of education. Their findings were found to be consistent with Livingstone's (2001) findings, in that informal learning engagement did not seem to differ based on these characteristics. However, their study revealed that as an employee's age increased, so did the degree of informal learning engagement.

Methodology

The type of research carried out for the study is descriptive research as it aims to describe the characteristics of the population. The data used for analysis was primary data collected from IT professionals in Coimbatore. The responses were obtained from the middle level and entry level IT employees. This study was conducted by administering questionnaires to the respondents for the collection of data.

The questionnaire used for this project makes use of five point Likert scale ranging from '1 - strongly disagree', '2 - disagree', '3 - neutral', '4 - agree' to '5 - strongly agree' for the ease of the respondents. The questionnaire was administered to 113 middle level and entry level IT professionals who were randomly chosen.

Measures

Formal learning

Formal classroom training is the mode of instruction most widely used by corporations to develop managers (Bassi& Van Buren, 1999). According to Enos, ThammKehrhahn and Bell (2003), formal training occurs in the absence of action; learners are removed from the day-to-day work to engage in lectures, discussions, simulations, role plays, and other instructional activities. Formal learning was measured using the ten item scale developed by the researchers Jacobs & Park (2009), KRIVET (2008).

Personal Learning Orientation

Personal learning orientation may be thought of as the ability, personality and interests relating to learning and development as per the studies of Baldwin &Magjuka (1991); Dweck& Leggett (1988); Lohman (2005); Noe& Schmitt (1986). Motivation to learn was assessed by the 8 item scale developed by Tharenou (2001). Self-efficacy was measured with the help of the scale modified by Bosscher and Smit (1998). Learning goal orientation was measured by the 8 item scale developed by Button et al. (1996).

Work Environment Characteristics

Research studies of Sambrook (2005); Svensson et al., (2004) suggest that workplace learning is enhanced by the development of a favourable work environment. Further, Marsick& Volpe (1999) argue that organizations can provide a working environment that promotes and encourages opportunities for informal learning. Supportive learning environment was assessed using a 12 item scale of Tracey &Tews (2005).

Informal Learning

The term 'Informal learning' was coined by Malcolm Knowles in the 1950s in his work on informal adult education. Bell and Dale (1999) described informal learning as learning which takes place in the work context and relates to the individual, their job and their performance. Conner (2003) has stated that informal learning is a learning process whereby the learner can acquire attitudes, values, skills and knowledge as part of their daily routine. The results of Choi & Jacobs (2009) indicated that both forms of workplace learning can be viewed as complementary. Informal learning was measured using a 12-item scale based on Lohman's (2005) 8-item measure

All the constructs of the questionnaire were found to have Cronbach's alpha value greater than 0.7

Table 1. Constructs of the study

S.No.	Dimensions	Number of items	Cronbach's alpha	Split half correlation	Spearman Brow prophecy
1.	Formal learning	10	0.90	0.82	0.90
	Personal learning orientation				
2.	General self-efficacy	12	0.76	0.72	0.83
3.	Learning goal orientation	7	0.83	0.79	0.88
4.	Motivation to learn	7	0.71	0.65	0.79
	Work environment characteristics				
5.	Organizational support	4	0.73	0.48	0.65
6.	Supervisor support	4	0.76	0.66	0.79
7.	Job Characteristics	4	0.71	0.59	0.74
	Informal learning				
8.	Learning with others	4	0.72	0.51	0.67
9.	Self-experimentation	4	0.81	0.78	0.87
10.	External scanning	4	0.75	0.59	0.74

Objectives

- To explore the constructs formal learning, personal learning orientation and work environment characteristics of the study.
- To explore if the demographic variables affect the constructs, formal learning, personal learning orientation and work environment characteristics under study.

Analysis

The mean value of the individual study constructs were analysed for addressing the objective of exploring the constructs and one way anova was used to test the homogeneity of the constructs across the demographic variables.

Exploration of Study Constructs

Table 2. Exploring the study constructs

S.No.	Study constructs	Mean of constructs	Standard deviation
1.	Formal learning	3.08	0.76
2.	Personal learning orientation	3.70	0.45
	General self-efficacy	3.21	0.54
	Learning goal orientation	4.08	0.63
	Motivation to learn	3.84	0.60
3.	Work environment characteristics	3.47	0.56
	Organizational support	3.46	0.78
	Supervisor support	3.37	0.78
	Job characteristics	3.57	0.58
4.	Informal learning	3.51	0.52
	Learning with others	3.62	0.67
	Self-experimentation	3.59	0.63
	External scanning	3.32	0.68

The mean variables of the constructs depict that personal learning orientation is highest and hence it is considered to be the highest contributor for informal learning while the other constructs have a mean value which is only minutely different from it and also contribute to a great extent. Among the sub constructs of personal learning orientation, learning goal orientation is found to contribute more and of the sub constructs of work environment characteristics, job characteristics contributes more. Also, learning with others, a sub construct of informal learning contributes highest to it. In addition to this, it is found that formal learning has the least mean value which supports the theory that most of work related learning takes place informally.

Testing For Homogeneity among the Constructs across Different Levels of Education

To test the homogeneity across the constructs based on educational qualification, one way anova was used. For conducting the test, the qualifications were categorized as diploma, undergraduate and postgraduate. The hypothesis tested here was to ascertain the differences among the constructs across educational qualification

H₀: There is homogeneity among the constructs across various educational qualifications

Table 3. Testing for homogeneity among the constructs across different levels of education

		Sum of Squares	Df	Mean Square	F	Sig.
Formal learning	Between Groups	1.604	2	.802	1.414	.248
	Within Groups	62.407	110	.567		
	Total	64.011	112			
General self-efficacy	Between Groups	.478	2	.239	.817	.445
	Within Groups	32.218	110	.293		
	Total	32.696	112			
Learning goal orientation	Between Groups	1.121	2	.561	1.411	.248
	Within Groups	43.696	110	.397		
	Total	44.817	112			
Motivation to learn	Between Groups	.543	2	.271	.750	.475
	Within Groups	39.823	110	.362		
	Total	40.366	112			
Organizational support	Between Groups	.250	2	.125	.203	.817
	Within Groups	67.654	110	.615		
	Total	67.904	112			
Supervisor support	Between Groups	.469	2	.234	.380	.685
	Within Groups	67.922	110	.617		
	Total	68.390	112			
Job characteristics	Between Groups	.181	2	.091	.266	.767
	Within Groups	37.446	110	.340		
	Total	37.627	112			
Learning with others	Between Groups	.950	2	.475	1.070	.346
	Within Groups	48.815	110	.444		
	Total	49.764	112			
Self-experimentation	Between Groups	.062	2	.031	.077	.926
	Within Groups	44.284	110	.403		
	Total	44.346	112			
External scanning	Between Groups	.664	2	.332	.719	.489
	Within Groups	50.796	110	.462		
	Total	51.460	112			
Personal learning orientation	Between Groups	.118	2	.059	.282	.755
	Within Groups	22.978	110	.209		
	Total	23.096	112			
Work environment characteristics	Between Groups	.259	2	.130	.402	.670
	Within Groups	35.445	110	.322		
	Total	35.705	112			
Informal learning	Between Groups	.246	2	.123	.449	.639
	Within Groups	30.090	110	.274		
	Total	30.335	112			

From the table, it is seen that all the significance values are above 0.05 and hence they are not statistically significant. Therefore it can be concluded that among the constructs, there is homogeneity or there is no difference across the educational qualifications – diploma, under-graduation and post-graduation.

Testing For Homogeneity among the Constructs across the Different Age Groups

For testing the homogeneity across the constructs based on age, one way anova was used. The respondent’s age was classified into groups with class intervals for ease of analysis. The hypothesis was thus formulated to test if there was any difference among the constructs with the age groups varying.

H₀: There is homogeneity among the constructs across various age groups

Table 4. Testing for homogeneity among the constructs across the different age groups

		Sum of Squares	Df	Mean Square	F	Sig.
Formal learning	Between Groups	5.407	4	1.352	2.491	.047
	Within Groups	58.604	108	.543		
	Total	64.011	112			
General self-efficacy	Between Groups	.626	4	.156	.527	.716
	Within Groups	32.070	108	.297		
	Total	32.696	112			
Learning goal orientation	Between Groups	.685	4	.171	.419	.795
	Within Groups	44.132	108	.409		
	Total	44.817	112			
Motivation to learn	Between Groups	1.216	4	.304	.839	.504
	Within Groups	39.150	108	.362		
	Total	40.366	112			
Organizational support	Between Groups	4.034	4	1.008	1.705	.154
	Within Groups	63.870	108	.591		
	Total	67.904	112			
Supervisor support	Between Groups	.892	4	.223	.357	.839
	Within Groups	67.499	108	.625		
	Total	68.390	112			
Job characteristics	Between Groups	.859	4	.215	.631	.641
	Within Groups	36.768	108	.340		
	Total	37.627	112			
Learning with others	Between Groups	.421	4	.105	.230	.921
	Within Groups	49.344	108	.457		
	Total	49.764	112			
Self-experimentation	Between Groups	.549	4	.137	.338	.852
	Within Groups	43.798	108	.406		
	Total	44.346	112			
External scanning	Between Groups	2.758	4	.690	1.529	.199
	Within Groups	48.702	108	.451		
	Total	51.460	112			
Personal learning orientation	Between Groups	.639	4	.160	.769	.548
	Within Groups	22.457	108	.208		
	Total	23.096	112			
Work environment characteristics	Between Groups	.644	4	.161	.496	.739
	Within Groups	35.060	108	.325		
	Total	35.705	112			
Informal learning	Between Groups	.380	4	.095	.343	.849
	Within Groups	29.955	108	.277		
	Total	30.335	112			

From the significance values, it can be seen that only the significance value of formal learning is lesser than 0.5 thereby leading to the conclusion that there is no

homogeneity or there is difference among the different age groups while taking formal learning into consideration. Whereas for the other study constructs, since the value of significance is greater than 0.05, it can be said that there is homogeneity or no difference among the other constructs across the different age groups.

Testing For Homogeneity among the Constructs across Departments

One way anova is used to test the homogeneity across the constructs considering the departments in which the study was conducted. The hypothesis was tested to identify if the study constructs differed across departments.

H₀: There is homogeneity among the constructs across the various departments

Table 5. Testing for homogeneity among the constructs across departments

		Sum of Squares	df	Mean Square	F	Sig.
Formal learning	Between Groups	2.312	5	.462	.802	.551
	Within Groups	61.700	107	.577		
	Total	64.011	112			
General self-efficacy	Between Groups	1.966	5	.393	1.369	.242
	Within Groups	30.731	107	.287		
	Total	32.696	112			
Learning goal orientation	Between Groups	2.116	5	.423	1.060	.387
	Within Groups	42.701	107	.399		
	Total	44.817	112			
Motivation to learn	Between Groups	1.205	5	.241	.659	.656
	Within Groups	39.161	107	.366		
	Total	40.366	112			
Organizational support	Between Groups	3.101	5	.620	1.024	.407
	Within Groups	64.803	107	.606		
	Total	67.904	112			
Supervisor support	Between Groups	3.138	5	.628	1.029	.404
	Within Groups	65.252	107	.610		
	Total	68.390	112			
Job characteristics	Between Groups	1.349	5	.270	.796	.555
	Within Groups	36.278	107	.339		
	Total	37.627	112			
Learning with others	Between Groups	1.901	5	.380	.850	.517
	Within Groups	47.863	107	.447		
	Total	49.764	112			
Self-experimentation	Between Groups	2.678	5	.536	1.375	.239
	Within Groups	41.668	107	.389		
	Total	44.346	112			
External scanning	Between Groups	.984	5	.197	.417	.836
	Within Groups	50.476	107	.472		
	Total	51.460	112			
Personal learning orientation	Between Groups	1.286	5	.257	1.261	.286
	Within Groups	21.810	107	.204		
	Total	23.096	112			
Work environment characteristics	Between Groups	2.175	5	.435	1.388	.235
	Within Groups	33.530	107	.313		
	Total	35.705	112			
Informal learning	Between Groups	.856	5	.171	.621	.684
	Within Groups	29.479	107	.276		
	Total	30.335	112			

It is evident that none of the significant values are statistically significant as all the values are above 0.05. Therefore, it can be said that there is no difference among the constructs across the various departments. Hence, it is evident that department does not affect the responses that the IT professionals have given for the various study constructs.

Testing For Homogeneity among the Study Constructs Across Experience

To test the homogeneity across the various experience ranges, one way anova tool was used. The hypothesis was formulated and tested to check if there was homogeneity among the constructs with experience of the respondents varying.

H₀: There is homogeneity among the study constructs across the various years of experience

Table 6. Testing for homogeneity among the study constructs across experience

		Sum of Squares	df	Mean Square	F	Sig.
Formal learning	Between Groups	3.823	4	.956	1.715	.152
	Within Groups	60.188	108	.557		
	Total	64.011	112			
General self-efficacy	Between Groups	.397	4	.099	.332	.856
	Within Groups	32.299	108	.299		
	Total	32.696	112			
Learning goal orientation	Between Groups	3.012	4	.753	1.945	.108
	Within Groups	41.805	108	.387		
	Total	44.817	112			
Motivation to learn	Between Groups	1.677	4	.419	1.171	.328
	Within Groups	38.688	108	.358		
	Total	40.366	112			
Organizational support	Between Groups	6.940	4	1.735	3.074	.019
	Within Groups	60.964	108	.564		
	Total	67.904	112			
Supervisor support	Between Groups	1.475	4	.369	.595	.667
	Within Groups	66.915	108	.620		
	Total	68.390	112			
Job characteristics	Between Groups	2.744	4	.686	2.124	.083
	Within Groups	34.883	108	.323		
	Total	37.627	112			
Learning with others	Between Groups	2.439	4	.610	1.391	.242
	Within Groups	47.326	108	.438		
	Total	49.764	112			
Self-experimentation	Between Groups	.936	4	.234	.582	.676
	Within Groups	43.410	108	.402		
	Total	44.346	112			
External scanning	Between Groups	1.382	4	.345	.745	.563
	Within Groups	50.079	108	.464		
	Total	51.460	112			
Personal learning orientation	Between Groups	.981	4	.245	1.197	.316
	Within Groups	22.115	108	.205		
	Total	23.096	112			
Work environment characteristics	Between Groups	2.028	4	.507	1.626	.173
	Within Groups	33.677	108	.312		
	Total	35.705	112			
Informal learning	Between Groups	1.207	4	.302	1.119	.352
	Within Groups	29.128	108	.270		
	Total	30.335	112			

From the significance values, it can be seen that only the significance value of organizational support is lesser than 0.5 leading to the conclusion that there is no homogeneity or there is difference in the organizational support to the different experience cadres. For the other constructs, it can be said that there is homogeneity among the constructs across the various years of experience as all the significance values are above 0.05 and hence are considered to be not statistically significant.

Age differs across formal learning because with change in age, the participation in formal learning activities either within or outside the organization differs for the IT professionals. With increase in age, the individuals may stop receiving coaching or mentoring due to the experience gained and may not be inclined towards pursuing higher education from a college or university. Hence, formal learning is seen to differ across age.

Similarly as experience increases, self-experimentation is seen to differ. This may be due to the fact that individuals who gain first-hand experience by self-experimentation tend to indulge in lesser self-experimentation activities due to the knowledge previously obtained by experience i.e., if the individual acquires knowledge by trial and error method, then the individual can use the knowledge acquired hereafter and there will not be a necessity to repeat it again.

Findings

The findings were obtained after the analysis of the data collected. In exploring the constructs, the mean variables of the constructs depict that personal learning orientation is the highest and hence it is considered to be the highest contributor for informal learning. Among the sub constructs of personal learning orientation, learning goal orientation is found to contribute highest and of the sub constructs of work environment characteristics, job characteristics contribute the highest. Also, learning with others, a sub construct of informal learning contributes highest to it. Formal learning has the least mean value which supports the theory that most of work related learning takes place informally.

Among the constructs, there is homogeneity or there is no difference across the educational qualifications – diploma, under-graduation and post-graduation. While testing for homogeneity among the constructs across the various age groups, it was found that there is homogeneity or there is no difference among the constructs across the various age groups except for the construct formal learning which differs across the different age groups. Further, it is seen that there is no difference among the constructs across the various departments. Except for the sub construct of organizational support which differs with experience level, there is homogeneity or no difference among the other constructs across the various years of experience

Conclusion

Thus, from the study conducted, it is evident that demographic variables do not affect the factors that impact informal learning greatly and formal learning activities contribute the least to workplace learning when compared with informal learning activities. Further, it is the responsibility of the individual to take part in more of informal learning activities for performing better at workplace.

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