

## Assessment of the Effects Tacit Knowledge, cognition and self -awareness on Informal Learning Process: A Study on Private Universities in Malaysia

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**Abstract:** Informal learning may have different facets such as participation in quality circles, job rotation, mentoring, but it may also be fully work integrated, taking place as people go about their daily work. Thus, in an informal learning process, the main task is on the people's shoulders that are exposed to highly innovative technologies, which have made them professional in implementing technical tools and processes. Among the human intellectual capabilities, self-awareness and cognitional power have more contributions to informal learning process. Informal and formal learning are happening among the team members and teams are made up of employees from different cognitional and different level of self-awareness. The way to understand the importance of communication between and among the company members, is to notify that people naturally demonstrate various cognitive power and they may have diverse levels of self-awareness capabilities. With tacit knowledge, people are not often aware of the knowledge they possess or how it can be valuable to others. Effective transfer of tacit knowledge generally requires extensive personal contact and trust that are deeply rooted in cognitive and self-awareness levels of employees. Thus, it is proposed that there must be a relationship between self-awareness, cognition, and tacit knowledge with informal learning.. In this study we desire to discover those most notable aspects of these dimensions on informal learning among 150 respondents in private universities in Malaysia. Results of the data analysis show that there is significant coherency between tacit knowledge : ( social skill, experience) , cognitive skill : ( Concentration, Perception, Memory) and Self-Awareness variables with informal learning.

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Over the past decade, there has been an increasing interest in applying informal learning along with other types of formal learning, while as an external method; it has contributed crucial aspects of education and knowledge. Informal learning is known as unstructured learning which occurs without planning and defined objectives within the real environment of the organization (Marsick & Volpe, 1999). Researchers like Michael Eraut (2000: 12)

believed that employing concepts like 'non-formal learning' is more useful than 'informal learning' which is a 'catch-all' label. It is highly accepted that the ability of externalizing and sharing of knowledge and skills are the most effective factors for acquiring inputs from an employee (Haldin-Herrgard, 2000), while the importance of documentation is related to the need of transforming the hidden knowledge into an explicit one, which can be others' tacit knowledge

(Haldin-Herrgard, 2000; Karhu, 2002). Polanyi (1967) believed that tacit knowledge is an individual's knowledge which is more than he can explain, or the knowledge of doing things without thinking. This type of personal knowledge is usually known as informal that can be felt and understood by the others (Sternberg, 1997). Moreover, Self-awareness is a wise process of feedback about one's behavior in order to improve the effectiveness (Dubrin, 2007).

In the current study, meta-abilities are applied as a base for empowering employees to externalize their knowledge and skills, as well as share and document them. While the meta-abilities had high influence on organizational development literature (Butcher et al., 1997), lately it has become a practice for organizational learning (OL).

Furthermore, in the current study, the informal learning implies to the kind of unstructured curriculum learning which has been defined by Knowledge Advisors. Moreover, different types of informal learning can be applied socially through communities. No matter what it is called, informal learning is developed from the necessity of learning to have knowledgeable and productive employees in the dynamic environment within the organization, in order to waste the opportunities to find a structured method.

Based on the past researches, there is no single study on the impact of tacit knowledge, cognitive skill and self-awareness on different aspects of informal learning. Due to the informal learning process, the aim of the current study is to examine the impact of the tacit knowledge, cognitive skill and self-awareness on informal learning. In addition, this study seeks to address most effective methods that can be applied by the organizations in order to achieve their goals by considering the primary data. By formalizing the informal learning, organizations would not limit their learners to structural rules or definitions. Moreover, measurement is a reasonable indicator that can be used by the organizations in order to be aware of availability, quality and effectiveness of informal learning. In this research, the impact of application of the primary data on employees' informal learning would be studied among a group of private universities in Malaysia.

## 2. Materials and Methods

### 2.1. Tacit knowledge

Based on Polanyi's research, knowledge consists of tacit and focal parts. In fact, he has found that an individual knows more than he can explain. While it is not easy to clarify by example, it should be considered that things are done through a combination of both tacit and explicit knowledge.

Polanyi believed that the tacit knowledge is included in subsidiary awareness and it can be detected through the object of focal awareness (Nonaka & Von Krogh, 2009). Polanyi argued that the subsidiary awareness is the combination of some kind of unarticulated and indefinable knowledge, and it is determined as the manual part of the action. Although subsidiary awareness is an unexplainable issue, it has a critical role in the process of knowing (Henry, 2010; Zappavigna & Patrick, 2010).

Explicit knowledge is a systematical and formal knowledge which can be documented and reviewed by words and numbers (Saint-Onge, 1996; Wan, et al., 2011), knowledge is highly personal, and rooted in one's mind, experience and behavior it can be shared through practical or empirical ways (Zappavigna & Patrick, 2010).

Tacit knowledge is a local knowledge which cannot be found in books, texts, databases or files, because it is not visible. (Anand, Ward, & Tatikonda, 2010; Erden, et al., 2008; Seidler-de Alwis & Hartmann, 2008).

#### 2.1.1. Social skill

One of the crucial functions in life which leads to success is good social skills. By this skill, students understand that in different situations how to choose, how to behave and what to tell. If children and even adults have a good social skill, this skill affects their behavior, attending in different activities, performance and family and social relationships. Moreover, school environment and safety also have an impact on social skills (Greenhow & Robelia, 2009).

If students have the full repertoire, they will be able to make social choices and also they can empower their interpersonal relationships to be successful in school. (Greenhow, Robelia, & Hughes, 2009).

#### 2.1.2 Experience

There are two types of learning, one is through studying and the other one is through experience. By experience it means the ability and knowledge that is acquired by experience not education (Holden, 2009).

Experience can help students on the things and situations that they have to be more focused on it. By having experience, making decision in divers situations become easily. Moreover in some aspects it can help to forecast the future. In other word, experience helps students to develop their instinctive ability to plan for their future (Holden, 2009; Johnson & Chandler, 2009).

#### 2.2. Cognitive Skill

Cognition or cognitive abilities are familiar concepts. Cognition is a solution by which a person understands and acts in the world. In other words, it is set of abilities, skills or activities that are common

among people. Cognitive abilities are the brain-based ability which helps to perform different duties from simple, daily to difficult and sophisticated. The most important cognitive skills which should be considered by the organizations:

- Concentration ability
- Perception ability
- Memory ability

#### 2.2.1 Concentration

If someone has high concentration, s/he can pay more attention on something. For paying attention to something it does not need thinking, it just needs a body function because paying attention is a swift happening, it is not very useful for learning. Paying attention is just shifting from something to something else. When children want to learn, they have to be focused on something for a long time and keep their attention during that time on that thing. This focusing is concentration (Kukulka-Hulme & Pettit, 2009; Schulz & Stamov Roßnagel, 2010).

Concentration consists of two important steps. First step is the act of paying attention which cannot happen automatically. Second step is the way that has to be taught and it is a cognitive skill (Jamieson, 2009; Kukulka-Hulme & Pettit, 2009; Schulz & Stamov Roßnagel, 2010; Sendzimir et al., 2008).

#### 2.2.2 Perception

There are many terms that can be used interchangeably; “perception” and “processing” are such terms (Caniels & Kirschner, 2010). For learning

something, first of all, perception has to take place, which means that one of the sense have to be aware about what is going to be learnt. Of course when someone wants to learn something, s/he has to be seen or heard. Therefore, in other words, it can be said that perception is interpretation. In fact without experience, a person misinterprets what s/he has seen or heard. It can be concluded that perception illustrates the worries about present situations because of the past experience. As the philosopher Immanuel Kant (1724-1804) said: “we see things not as they are but as we are” (Hoekstra, Korthagen, Brekelmans, Beijaard, & Imants, 2009; Lohman, 2009; Meltzoff, Kuhl, Movellan, & Sejnowski, 2009).

People need to clarify their sense and this thing happens if they have a previous experience about that thing. Furthermore, for having a perceptual ability, people need to have perceptual practice and experience about the same subject. In conclusion, perception is a kind of cognitive skill that can be improved through experience and practice (Caniels & Kirschner, 2010).

#### 2.2.3 Memory

There are lots of memories that can be learnt. The following table 3.3 indicates the different categories of memory and the problems that will occur without these memories (Lewis, Pea, & Rosen, 2009).

Table 2.1 Memories and Problems (Lewis, et al., 2009)

Types of memory	Definition	Problems
<i>Receptive memory</i>	Ability to note the physical features of a given stimulus to be able to recognize it at a later time.	Receptive processing difficulties invariably fails to recognize visual or auditory stimuli
<i>Sequential memory</i>	Ability to recall stimuli in their order of observation or presentation	Many dyslexics have poor visual sequential memory
<i>Rote memory</i>	Ability to learn certain information as a habit pattern	Unable to recall with ease those responses which should have been automatic, such as the alphabet, the number system, multiplication tables, spelling rules, grammatical rules, etc.
<i>Short-term memory</i>	Short-term memory lasts from a few seconds to a minute; the exact amount of time may vary somewhat	Need this kind of memory to retain ideas and thoughts when writing a letter
<i>Long-term memory</i>	Ability to retrieve information of things learned in the past	Cannot do anything, like a newborn baby

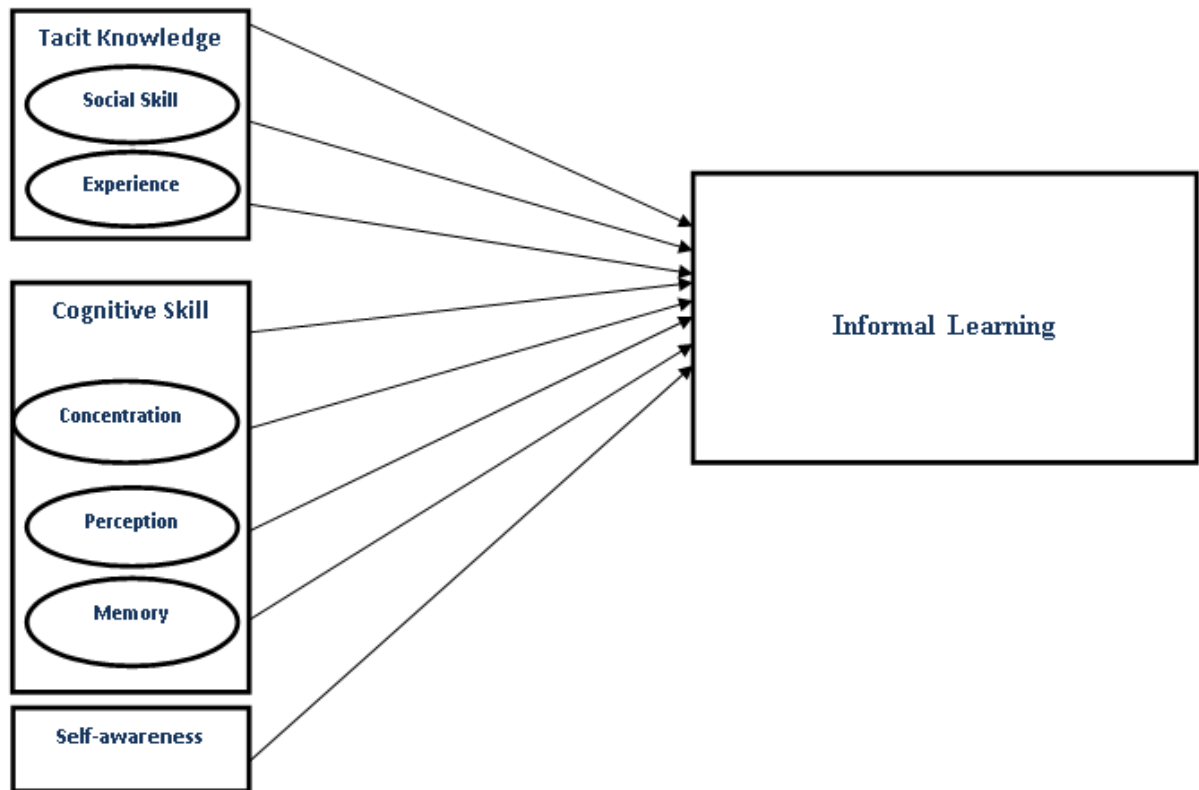
### 2.3. Self-awareness

Self-awareness is the ability of determining the task that should be done in the specific time through determined organizational approaches. This is the other word of “doing the right thing in the right time”. This statement helps employees to adapt with the rapid changes in organization and environment. This process includes externalization, share and classification process from other employees’ knowledge (Chisholm, et al., 2009; Dabbagh & Kitsantas, 2011; Reinhardt, 2010).

Self-awareness has been recognized as the most essential element of emotional abilities, and it is introduced as foundation of many competencies which facilitates effective interpersonal relationships. Studies show that most of the people suffer from low level of self-awareness; however, one’s high ability in understanding emotions would cause problems at the work place. People with low level of awareness about themselves have problems in intra or inter personal relationships (Boucouvalas & Lawrence, 2010; Chisholm, et al., 2009; Dabbagh & Kitsantas, 2011; Reinhardt, 2010).

### 2.4 Research Method

The main purpose of this research is the impact of tacit knowledge, cognitive skill and self-awareness on informal learning by which the level of learning in students makes perfect. Based on quantitative structure, developed Research Framework consists of three categories as independent variable and informal learning as dependent variables. Eight hypotheses have been defined for this study. For this study primary data will be chosen and stretched questionnaire has been developed. Population and sampling are chosen in order to collect data. The population for this study is students of Selangor private universities in Malaysia. The sample size is 150 respondents. These 150 respondents are students from different nationalities. All these data were collected by simple random sampling. Questionnaire For this study the questionnaire includes four parts. First part focuses on general and demographic information .Numbers of 50 questionnaires have been distributed in order to examine the reliability of questionnaire. The data been analyzed through Microsoft 2007 and SPSS application frequency analysis Multiple Regression Pearson’s correlation.



**Figure 1.**Proposed conceptual model by Benoush et al. (2012)

### 3.Results and discussion

The data analysis is being founded on collecting data from the respondents who fulfill the aims of this research. This chapter consists of four main parts:

#### 3.1 Frequency

- Descriptive analysis

**Table3.1.** Demographics

		Frequency	Per
Gender	Male	77	51.3
	Female	73	48.7
Age	20-25	103	68.7
	25-30	40	26.7
	Above 30	7	4.7
program	Bachelor	81	54.0
	Master	62	41.3
	PHD	3	2.0
	DBA	4	2.7
Total		150	100

Table1 Shows that 73 of the respondents are female, which represents 48.7% of total respondents' percentage. There are also 77 male respondents, which signify 51.3% of total respondents. In addition, it illustrates that 103 participants of the survey are between 20 to 25 years old, which represent 68.7% of total respondents. There are 40 respondents at 26.7%

Table 3.2.: Descriptive Statistics for variables

Descriptive Statistics				
	N	Minimum	Maximum	Mean
Avre_Social.Skill	150	1.20	5.00	3.3973
Avre_Experience	150	1.40	4.80	3.3707
Avre_Tacit.knowledge	150	1.20	5.00	3.4613
Avre_concentration	150	1.40	4.90	3.4180
Avre_perception	150	1.40	5.00	3.4480
Avre_Memory	150	1.40	4.80	3.4867
Avre_cognitive.skill	150	1.40	5.00	3.4067
Avre_Self.awareness	150	1.40	5.00	3.3733
Avre_Informal.learning	150	1.20	5.00	3.4467
Valid N (listwise)	150			

- Pearson Correlation
- Multiple Regressions

Frequency analysis for demographic variables For this study primary data will be chosen. At the first Demographic analysis was done that the results are shown in Table1.

of total respondents, between 25 to 30 years old. While a total of 7 respondents, which represent 4.7% are above 30. Moreover, based on the respondents' answer, total of 81 participants, which represent 54% of respondents, are in Bachelor program. There are 62 respondents, who are in Master Program which represent 41.3% of participants. A total of 3 respondents with 2% are in the PhD Program. There are 4 respondents who are in DBA Program which represent 2.7% of total respondents.

#### 3.2 Descriptive Analysis for Variables

For this research all variables were measured according to five-point scale. Most of the mean of the variables are more than 3. This means that most of the respondents feel that informal learning will increase to a level according to the variables. The minimum of 1 indicates that the respondents strongly disagree with the effect of the independent variables on informal learning and the maximum of 5 represents that the respondents strongly agree that the independent variables bring more of that.

### 3.3. Pearson's Correlation

#### 3.3.1 Correlation Analysis

The following results in Table 3.3. show the bivariate correlation between independent variables and informal learning.

**Table 3.3.** Correlation between Independent Variables and Informal Learning

		Avre_Informal.learning
Avre_Social.Skill	Pearson Correlation Sig. (2-tailed) N	.776** .000 150
Avre_Experience	Pearson Correlation Sig. (2-tailed) N	.859** .000 150
Avre_Tacit.knowledge	Pearson Correlation Sig. (2-tailed) N	.969** .000 150
Avre_Concentration	Pearson Correlation Sig. (2-tailed) N	.834** .000 150
Avre_Perception	Pearson Correlation Sig. (2-tailed) N	.785** .000 150
Avre_Memory	Pearson Correlation Sig. (2-tailed) N	.720** .000 150
Avre_Cognitive.skill	Pearson Correlation	.767**

	Sig. (2-tailed) N	.000 150
Avre_Self-awareness	Pearson Correlation Sig. (2-tailed) N	.828** .000 150

The output of Pearson’s Correlation between independent variables and informal learning indicates that: There is a Moderate positive relationship exists between social skill and informal learning because the value of Pearson’s Correlation is 0.776 and its p-value is 0.000 which is less than 0.05. There is a High positive relationship between experience and informal learning because the value of Pearson’s Correlation is 0.859. There is a High positive relationship exists between Tacit knowledge and informal learning because the value of Pearson’s Correlation is 0.969. There is a High positive relationship that exists between Concentration and informal learning because the value of Pearson’s Correlation is 0.834. There is a Moderate positive relationship exists between Perception and informal learning because the value of Pearson’s Correlation is 0.785.

There is a Moderate positive relationship between Memory and informal learning because the value of Pearson’s Correlation is 0.720. There is a Moderate positive relationship between Cognitive skill and informal learning because the value of Pearson’s Correlation is 0.767. There is a High positive relationship between Self-awareness and informal learning because the value of Pearson’s Correlation is 0.828.

**3.4. Regression analysis**

3.4.1. Multiple Regression analysis on relationship between independent variables and dependent variable

The Anova table for multiple regressions is presented in table 3.4.

Table 3.4.: ANOVA for all Variables

**ANOVA<sup>b</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	100.185	8	12.523	594.770	.000 <sup>a</sup>
Residual	2.969	141	.021		
Total	103.153	149			

a. Predictors: (Constant), Avre\_self.awareness, Avre\_Memory, Avre\_tacit.knowledge, Avre\_Social.Skill, Avre\_perception, Avre\_concentration, Avre\_Experience, Avre\_cognitive.skill

b. Dependent Variable: Avre\_Infomal.learning

ANOVA Table 3.4.vshows that p-value is less than 0.05 ( $0.000 < 0.05$ ). So, the model is valid and can be used for thesis hypothesis

Table 3.5: Coefficient for all Variables

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.063	.058		1.082	.281
Avre_Social.Skill	.392	.077	.422	5.062	.000
Avre_Experience	.814	.070	.825	11.647	.000
Avre_tacit.knowledge	.813	.031	.822	26.496	.000
1 Avre_concentration	.016	.034	.015	.457	.000
Avre_perception	.026	.032	.025	.823	.000
Avre_Memory	.055	.033	.052	1.683	.000
Avre_cognitive.skill	.388	.082	.391	4.715	.000
Avre_self.awareness	.694	.074	.713	9.339	.000

a. Dependent Variable: Avre\_Infomal.learning

Table 3.6: ANOVA by Stepwise Method

**ANOVA<sup>d</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	96.925	1	96.925	2303.036	.000 <sup>a</sup>
Residual	6.229	148	.042		
Total	103.153	149			
2 Regression	98.184	2	49.092	1452.151	.000 <sup>b</sup>
Residual	4.970	147	.034		
Total	103.153	149			
3 Regression	99.580	3	33.193	1356.038	.000 <sup>c</sup>
Residual	3.574	146	.024		
Total	103.153	149			

a. Predictors: (Constant), Avre\_Tacit.knowledge

b. Predictors: (Constant), Avre\_Tacit.knowledge, Avre\_Experience

c. Predictors: (Constant), Avre\_Tacit.knowledge, Avre\_Experience, Avre\_self.awareness

d. Dependent Variable: Avre\_Infomal.learning

Based on Table 3.7, tacit knowledge, experience and self-awareness have the highest Positive relationship with Informal learning, and among these three variables, tacit knowledge has the highest

positive relationship, experience Moderate positive relationship and self-awareness Low positive relationship.

Table 3.7: Coefficient by Stepwise Method

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.128	.071		1.799	.074
	Avre Tacit.knowledge	.959	.020	.969	47.990	.000
2	(Constant)	.028	.066		.427	.670
	Avre Tacit.knowledge	.802	.031	.810	25.553	.000
	Avre Experience	.191	.031	.194	6.103	.000
3	(Constant)	.025	.056		.441	.660
	Avre Tacit.knowledge	.840	.027	.849	30.913	.000
	Avre Experience	.642	.065	.650	9.819	.000
	Avre self.awareness	.489	.065	.502	7.551	.000

a. Dependent Variable: Avre\_Informal learning

#### 4. Conclusion

This study was conducted to trace the coherency between eight independent variables: 1) Tacit knowledge (Social skills, Experience, tacit knowledge), 2) Cognition (Concentration, Perception, Memory, Cognitive skill), 3) Self-awareness and informal learning as a dependent variable. The main purpose of this study was improving informal learning through the development of cognition, self-awareness, and tacit knowledge in private universities in Malaysia. The population of this study is the students of private universities in Malaysia. The respondents were 150 students of the above mentioned university.

##### 4.1 Relationship between Tacit Knowledge and Informal Learning

The result of the analysis findings showed that tacit knowledge has High positive relationship with informal learning while social skill has moderate positive relationship with it, and experience has a moderate positive relationship with informal learning.

##### 4.2 Relationship between Cognition and Informal Learning

The result showed that concentration and memory have moderate positive relationship with informal learning; on the other hand, cognitive skill has a low positive relationship with informal learning.

##### 4.3 Relationship between Self-Awareness and Informal Learning

The result showed that self-awareness has a meaningful association with informal learning. It means that by increasing the self-awareness, the informal learning increases too.

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