



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

January 2018, VOLUME 6, ISSUE 1, 68 - 94

E-ISSN NO: 2289 – 4489

ORGANIZATIONAL LEARNING: PROSPECTIVE ON EMPLOYEES READINESS USING INFORMATION SYSTEM SUPPORTED LEARNING

Jamshid Ali Turi¹ (PhD), Shahryar Sorooshian¹ (PhD), Muhammad Faizal
A. Ghani ²(PhD), Yasir Javed ³(PhD) & Asif Ali³

ABSTRACT

This study examined the theoretical, historical, philosophical prospective, perceptions and readiness of employees for information system supported learning in a learning organization. In this study, a conceptual model based on the theory of planned behaviour is used which explains how employees in learning organization conceive organizational learning using information systems. Structural Equation Modelling (SEM) was used to analyse data from 200 employees including knowledge employees, faculty members, postgraduate working employees (internees), administrators and interneers at university using convenient sampling techniques. The results show that employees' acceptance of an Information System for organizational learning is reasonably well, based on the theory of planned behaviour. More specifically, attitude and behavioural control positively influenced their intention to accept organizational learning through an information system. The research shows that perceived ease of use and perceived usefulness affects employees' and working employees' attitude towards adoption of an information system for organizational learning.

Keywords: Organizational Learning, Information System, Supported Learning, Higher Education, Pakistan.

[1] Faculty of Industrial
Management,
University Malaysia Pahang,
MALAYSIA.

[2] Faculty of Education,
University of Malaya, MALAYSIA.

[3] COMSATS University,
Abbottabad Campus, PAKISTAN.

Corresponding Author:
University of Malaya, MALAYSIA.
Email:
mdfaizal@um.edu.my



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

INTRODUCTION

Information system (IS) in any organization can be likened to the heart in our body. It collects, processes, and distributes meaningful data, converts them into information and fulfils the needs of individuals, groups and management functionaries for improvement in the decision-making processes and performance of the organization. Due to its versatility, Information System performs and helps in diverse organizational tasking and improves performance and organizational learning (Law & Chuah, 2015; Savolainen & Haikonen, 2016). According to learning theories, organizations are extended human beings; they learn from environmental happenings, disasters, practices and experiences; consciously, subconsciously and unconsciously through formal, non-formal and informal sources with the support of moderating and mediating tools like information systems (Alzahrani & Woollard, 2011; Bandura, 1989; Belle, 2016). The learning process thus becomes smoother, easier and more progressive if it receives the support from the environment, working tools, models, and techniques. Therefore, researchers recommend to precede organizational progression, performance and learning with the latest informational and technological tools like information system (A. Hart, Gilstrap, & C.Bolino, 2016).

A lot of work has been done in the last few years to see the effectiveness of information system among employees working in learning organization across various European countries. Research proved that the use of information system devices is very useful in the learning process (Ahmad & Lodhi, 2014). Although the information system and services are inexpensive in Pakistan, not much work and researches has been done to find the extent to which information system devices are being used for organizational learning purposes. Moreover, no work has been done to identify the factors affecting the use of information system devices for learning purposes among employees in the learning organization in Pakistan. Such study can be useful in planning how we can use information system effectively for learning purposes (Ahmad & Lodhi, 2014; Hameed, 2014).

Thus, particularly, the objectives of this research are as follow:

- i. To determine the organizational learning readiness among employees in higher education with the support of information system; and
- ii. To determine the reasons that has the effect on the adaptation of information system in organizational learning.

LITERATURE REVIEW

Definitions of Organizational Learning

Organizations can be considered to be like a human; they can adapt purposefully and live in a fluctuating setting, learn in the best feasible, possible, optimal, and economical way due to internal and external pressures (Spender, 2009; Al-Mamary et al., 2014). Organizational Learning involves a change in the organizational knowledge repository which comes from the circulation of experiences, practices and policies (Lalli, 2014). It occurs in an organizational context and is focused on organizational targets and problems, containing organizational structures, procedures, norms, culture, organizational memory and information systems (Levitt & March, 1988; Yousef, Mai, Ra'ed, & Tarhini, 2016).



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

It is a two-fold process, in which individual knowledge is captured and made part of an organizational repository and in return is shared among new employees as a guideline for organizational processes (Scott, 2011). Moreover, it is a source for developing organizational capacities, capabilities, gaining competitive sustainable development, supporting innovation and bringing competitive advantages from an economy prospective through repeated and newly learned skills and knowledge (Kalmuk & Acar, 2015).

Organizational Learning Perspectives

Organizational learning research can be grouped into three major perspectives, i.e. learning due to internal preventive behaviour, learning due to change in organizational routine and learning for future to enhance performance (Akgün, Byrne, Lynn, & Keskin, 2007). Due to these themes and perspectives, a variety of disciplines have contributed, provided insight, in-sighted and influenced the field of organizational learning (Ahmad & Lodhi, 2014). These disciplines range from economics, management science, organizational science, strategic management, human-resources management, information science, knowledge engineering, artificial intelligence, philosophy, psychology, and educational science, to cognitive science. Psychological sciences focused on the cognitive, behavioural and social development of the worker (Beauregard, Lemyre, & Barrette, 2015) while management sciences were concerned with accurate information gathering, processing and utilization for strategic planning (Sampe, 2012); production management aimed to increase productivity due to enhancement of learning; sociology focused on social structure; bonding and leadership support for organizational learning and creating sound learning culture, a culture of trust and empowerment, and lastly, natural sciences sought the devising of technological tools for storing and sharing organization learning (Sampe, 2012; Virtual University, 2012; Bustinza, Molina, & Arias-Aranda, 2010; Arumugam, Idris, & Munusamy, 2015). While research into organizational learning often occurs in the region of natural science, it falls largely within the province of social, business and management science (Yousef, Mai, Ra'ed, & Tarhini, 2016). Research relating to organizational learning is a mixture of positivism, constructivism and phenomenology but mostly positivism is followed because of its nature and domain (Akgün, Byrne, Lynn, & Keskin, 2007).

Types of Organizational Learning

- Single loop learning/adaptive learning

This concept was presented by Argyris and Donald Schon in the 1970s, focusing on basic, overt and behavioural and action-based changes occurring in organization to get reach expected and defined results and goals (Kantamara & Ractham, 2014; Coopy, 1998; Cartwright, 2002; Argyris, 1991). Its main focus is on the changes in action, the action and strategy to get the desired results. Although it does not lead to change in the underlying routines, policies and structure, it still adds to individual, group and organizational learning and performance (Kantamara & Ractham, 2014; Argyris, 1976). This has been named by many authors and researchers as adaptive learning, as the learner has to adopt certain behaviours and practices after correcting them, or after moulding them, bringing them in-line with organizational demands (Argyris & Schön, 1974, 1978; Fiol & Lyles, 1985; Chivas et al., 2010).



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Double loop learning/generative learning

This concept was presented by Argyris (1976), and described as a process of spotting difficulties, identifying change on a justifiable valid foundation, certain choices, and actions and constructing new models and methods based on the new organizational learning, insights and experiences. Double loop learning takes place in a context viable critical thinking, interpersonal or specialized technical issues, which need regular public engagement in experiences, concepts and constructs (Cartwright, 2002; Belle, 2016). It additionally requires learning circumstances in which members can look at and explore different avenues regarding their speculations of activity. It invites employees to think deeply about actions and underlying beliefs and recommends changes if applicable and needed for the competitive development of the organization (Argyris, 1976; Kantamara & Ractham, 2014; Coopy, 1998; Cartwright, 2002; Belle, 2016). It modifies the underlying norms, working conditions, policies and objectives and gets complete understanding of the phenomenon and situations (Argyris & Schön, 1974, 1978; Fiol & Lyles, 1985; Chivas et al., 2010).

- Deutero organizational learning

Deutero learning is learning about learning processes, methods and models. It focuses on the procedure of gaining knowledge using feedback mechanism, collaborative inquiry and reflection on structure models, techniques and policies in organizations (Belle, 2016; Frees, Acker, & Bouckaert, 2014). This term was first coined in 1942 by the Anglo-American anthropologist Gregory Bateson (1904-1980) and later on, modified by Argyris and Schon (1976). This type of learning is consistent, behaviourally open, and to a great extent, unconscious. It tends to avoid unequivocal directing and sorting out. Particularly in its neurotic, twofold restricting structure, it doesn't effectively prompt organizational or individual change (Belle, 2016; Argyris, 1976; Kantamara & Ractham, 2014). This type of learning is discrete, subjective, and cognizant. It is, to a great extent, amenable to controlling and arranging and is subjected to individual and organizational change (Ahmad & Lodhi, 2014).

Theoretical Perspectives on Organizational Learning

- Cognitive theories of organizational learning

Organizations can be considered as learning entities, as they have memory systems and possess learning capabilities. Some theorists have called them mental models, cognitive maps, collective memory and cognitive systems (Göhlich, 2016; Goldin, 2014). Simon (1991) calls organizations "extended individuals", as organizations follow a natural life cycle of learning as in individuals through mental mapping and modelling. Similarly, Daft and Weick (1984) assert that when an individual's knowledge is made coherent, shared, assessed, reshaped and distributed among employees, it forms collective cognitive maps that are the basis of organizations' information processing mechanisms, enabling the organization to detect environmental stimuli (Bandura, 2001). Interpretations of environmental information are made through organizational references and context, and what is required is kept but unnecessary information is discarded (Ford, 2006; Alhabeeb & Rowley, 2017).



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

While Daft and Weick (1984) point out the need and necessity for organizations to develop and design their interpretation system, they are relatively reluctant to discard the cognitive perspective with its over-reliance on the scanning characteristics of organizations and on individuals as interpretation-processors (Fiol & Lyles, 1985; Goh & Reyan, 2002). According to learning theorists, experiences also have a greater impact on learning in organizations. This learning converts abstract idea into practical experiences (Cook & Yanow, 2012; Bandura, 1989). Kolb (1973) states that learning takes place progressively, and moves from concrete experience to reflective observation, then to abstract conceptualization, and finally to active experimentation. This perspective suggests an active interconnection between cognition and action (A.Hart, Gilstrap, & C.Bolino, 2016). He argues that learning from experience is a fundamental process of organizational intelligence; whereby environmental responses to organizational actions affect individual cognition and future preferences, which will then be used to choose among future alternatives (March & Olsen, 1975; Arias & Solana, 2013; Gaine, 2014). Computational cognitive theory takes into consideration and supports all social, cognitive and behavioural factors in learning (Sun, 2012). The above arguments and theoretical discussion conclude that cognitive development plays a part in organizational learning.

- Behavioural theories of organizational learning

Behavioural learning focuses on objectively observable behaviour (Bandura, 1989). This approach assumes that learning is the acquisition of new behaviour based on organizational demands and strategies and the consequences of previous behaviour, which ultimately improve performance (Alalwan, Dwivedi, Rana, & Williams, 2016; Akgün, Byrne, Lynn, & Keskin, 2007). Some organizational learning theories mirror the stimulus-response patterns of behaviour. For Weick (1991), “the defining property of learning is the combination of same stimulus and different response”. Similarly, Cryert and March (1963) see organizational learning as an involving adaptation. For them, organizational learning occurs when an organization, in response to “an external source of disturbance or shock”, selects behaviours that lead the organization “to a preferred state” (Akgün, Byrne, Lynn, & Keskin, 2007; Apontea & Zapata, 2013). All single, Double-loop and Deutero learning are not independent from its consequences and are triggered by stimulus, questioning and reasoning (Cartwright, 2002; Kantamara & Ractham, 2014). A very similar conceptualization of learning is offered by Fiol and Lyles (1985) and Cartwright (2002), who indicate that two important dimensions of learning are cognitive and behaviour development which link change in behavioural and cognitive development through social networking (Hieronymi, 2013). This can also be described as path-dependency theory, meaning that organizations base their future behaviour on cumulative learning that has worked in the past, which is similar to the idea of positive reinforcement in behavioural conditioning. Thus, lower-level learning represents associative learning based on the stimulus-response model. Higher-level learning, on the other hand, “is a more cognitive process than is lower-level learning” (Fiol & Lyles, 1985).

- Relational theory of organizational learning

This theory is based on the concept of sharing and negotiation taking place at the micro-level, worker level (Scott, 2011). Azmi (2008) urges that the promotion of learning activities should be the top priority to increase organizational efficiency and effectiveness (Bustinza, Molina, & Arias-Aranda, 2010). Much earlier in the writing of Senge (1990), this notion was explained as; it can create advantageous opportunities for organizations.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

William Isaacs (1993) researched and rightly guessed the strengths, potentials and energies at individual level (Scott, 2011). Sharing of knowledge provides food for common intelligence, compels organization and their employees to face uncertainties in complex business phenomena, promote individual and organizational learning and make survival possible at the individual and organizational levels (Bustinza, Molina, & Arias-Aranda, 2010; Beauregard, Lemyre, & Barrette, 2015).

- Experiential learning theory

Experiential Learning Theory (ELT) was presented by Kolb in 1984 and has its roots in Psychology, Philosophy, and Physiology and has had a major impact on organizational learning, organizational development and leadership (Leavitt, 2011). It states that learning takes place due to diverse experiences and projecting (Kolb & Kolb, 2008; Beauregard, Lemyre, & Barrette, 2015). An ELT cycle is composed of four stages: concrete experience (CE), abstract conceptualization (AC) which comprise the grasping component, while reflective observation (RO), and active experimentation (AE) make up the transforming experience component (Leavitt, 2011; Sharlanova, 2004). It provides a theoretical basis for independent problem and project based learning that becomes part of the organizational processes, which can be easily shared among knowledge employees to work more productively (Eisenberg, 2016).

- Adaptive and generative learning theory

Peter Senge's theory is based on Kolb's work. It focused on the already established mental models, their underlying embedded norms, patterns and their applications in our lives, experiences and understanding (Li, 2016; Otilia, Cristian-Valentin, Ruxandra, & Aurel, 2014). This theory believes in the construction of the shared vision of intelligence of the worker, team and organizational levels to generate new ideas, strategies regarding cost, time, quality and scope and many other enabling factors to make an organization robust and stronger (Apontea & Zapata, 2013; Bloom, 2010). This theory was supported by James March (1991), who further extended it and identified two methods of exploration and exploitation in organizational learning (Eisenberg, 2016).

- New institutional theory and organizational learning

This theory postulates that with the passage of time, organizations react to internal and external demands and reflect changes in their cognitive, normative and regulatory domains (Powell, 2007; Meyer & Höllerer, 2014; Palthe, 2014). Organizations adapt themselves, incorporate needed hard and soft components, and thus train their employees to meet customer expectations and the environmental demands (Starbuck, 2017; Schulz, 2001). New-institutional theory also supports 4I framework arguments for organizational learning (Wiseman, 2007; Veisi, 2010).



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Socio-technical systems theory and organizational learning

This concept and theory was first articulated by the Avistock Institute of Human Relations in England in the 1950s to decrease the damage of the Second World War and to increase the effectiveness and cohesiveness among different parts of organizations. The basic premise and philosophy of this concept and construct is that any work, enterprise or organization is the combination of both social and technical (soft and hard) components and they are open to the environment and each affects the other in a bidirectional way (Appelbaum, 2000). The early aim of this concept was to harmonize jobs and to open new windows of learning and opportunities to move organizations to new horizons (Sawyer & Jarrahi, 2013). It is based on the interaction of two sub-systems of an organization i.e. social structure and technology (Bustinza, Molina, & Arias-Aranda, 2010; Carroll, 2012). It provides social support, solves complexities and assures the availability of information to employees. The main premise of this theory is its participatory approach, the interaction and involvement of employees with information technology which guides and promotes learning. It is also evident that technology cannot take place without the help and presence of employees and in the same way humans also need the support of the latest technologies to promote learning, productivity, efficiency and effectiveness (Sawyer & Jarrahi, 2013). This interaction and interdependence have brought changes in behaviours, social interaction and engagement of employees due to the use of technological devices, its tools and their impact on organizational productivity (Schulz, 2001; Virtual University, 2012). This promotes a satisfying, challenging, inquiring work environment, which complements and synergizes learning and productivity. The collaboration of social structure and information system gives birth to certain successful fields and products like Human Computer Interaction (HCI), Reengineering, R&D projects and Software Engineering. Institutional concept and theory also argue for changes in organizational structure with the support of the latest technologies such as information systems. Similarly, Structuration theory argues that the organizational structure changes with the advent of new technologies, otherwise their existence remains stuck in place (Sawyer & Jarrahi, 2013; Whitworth, 2009). At first, this view was criticized by opponents as it caused stresses, but with technical training, it boosted worker's morale and motivation. Employees found their skills to be improving, their hidden potentials explored, and therefore their morale and motivation rose (Virtual University, 2012; Comfort, 2013). According to the statements, concepts, constructs, premises and philosophy of this theory, it is evident that organizational learning, effectiveness, efficiency and productivity are based on the logical coherence of the social and technical components of the organization.

- Contingency theory and organizational learning

Contingency theory is typically assessed on the criteria of technical rationality and efficiency, which implies a constrained way of thinking compared with those encouraged by other perspectives such as learning and motivation. (Ashkanasy, 2016; Blackman & Henderson, 2013). It defines the best possible, optimal, economical, technical and feasible way to cope with uncertain situations by building the morale, confidence and competency of employees. When skills deficiencies are identified, it approaches and resolves and addresses them with best possible response planning. It takes into account both general and socio-technical sub-systems of the organization to co-ordinate with the organizational performance and targets (Armstrong, 2010; Beauregard, Lemyre, & Barrette, 2015).



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

Philosophical Prospective of Organizational Learning

- Epistemological foundations of organizational learning

Epistemology is the theory of the nature and validity of knowledge. It studies the source, prerequisites, characteristics, range, and factualness of learning. Objectivism treats organizations as the perfect learning system. From this perspective, organizational learning is an organizational action which is controllable and predictable (Ashkanasy, 2016). With well-defined organizational structures, designs, functions, and routines, its main focus is on performance enhancement, goal achievements and continuous learning (Blackman & Henderson, 2013).

In contrast, subjectivism-based organizational studies believe in social construction, symbolic interactionism, hermeneutics, and postmodernism and regard the organization as an interaction of groups with affiliations between members (Bateson, 1979). These studies rely on texts, narratives, and dialogues (Van Buskirk & McGrath, 1992). Moreover, the members of such an organization can be given more authority and encourage pluralistic voices, views, and values (Carroll, 2012). The process-oriented approach describes organizational learning development as a dynamic and continuous process; it includes the use of information, environmental changes, feedback and the incorporation of an integrated organizational learning into the members' beliefs (Kantamara & Ractham, 2014). It analyses organizational learning based on the organization's capability and focuses on the effect and outcome from a target-oriented viewpoint (Daud & Kamsin, 2003). It is also called the macro-level approach to organizational learning (Rescher, 2003; Seirafi, 2012; Tennis, 2012).

Organizational epistemology has its roots in Nonaka's theory of knowledge creation, and Engstrom's expansive learning theory (Baek-Kyoo, 2010). According to evolutionary epistemology, an organization continually learns new practices, models, methods and knowledge in the dynamic environment for its own survival (Steininger, 2010; Aljuaid, Alzahrani, & Islam, 2013). These learning processes open divergent thinking, new perspectives and create new entities and identities in an environment (Jacky, 2003). According to this philosophical point of view, organizations learn and are evaluated on their old knowledge repositories (Alzahrani & Woollard, 2011; Gherardi & Nicolini, 2001).

- Ontological foundations of organizational learning

The branch of ontology in philosophy is concerned with human's subjective and objective thoughts and confirms the essence of this subject and its true intrinsic quality, and the in all human phenomena and behaviour (Bustinza, Molina, & Arias-Aranda, 2010). Ontology in Western philosophy is characterized by two central viewpoints: the worldviews of being and becoming, which have also come to be known as, after further development, objectivism and subjectivism (Virtual University, 2012; Cook & Yanow, 2012). In terms of Western philosophical views, objectivism primarily originated from realism; therefore, objectivism conveys the impression that the external transcendental world exists purely as a result of human consciousness (Chuang, 2009). Over the past century, organization theory in its contemporary form was predominantly built on mechanistic precepts (Blackman & Henderson, 2013). The management of such organizations is based on scientific management, administrative principles, and bureaucracy-oriented classical management theory, in the form of precise work design, procedural adoption, different courses of action, hierarchical separations of authority, written documentation, standardization, and other normalizing activity and competence evaluations (Blackman & Henderson, 2013; Chuang, 2009).



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

Organization theory has also been gradually transformed into its modern version, with further emphasis on respect for its environment. It encompasses innumerable external factors and the organization allocates additional resources for coping with environmental factors to work under unexpected conditions. Thus, organization theory studies at this stage are known as modern organizational studies (Law & Chuah, 2015). Clegg (1992) states that researchers can manipulate objective perception using precise scientific calculations, in order to effectively represent the conversion of resources into products and cope with an unexpected situation (Birmingham, 2015).

Organizational Learning and Information System (IS)

Organizational learning with information system was first started by Argyris (1977), who claims that organizational learning would be helpful in solving difficulties and that the use of new technologies can be very beneficial in this regard. In the second phase of research, certain applications and hardware were developed for information system to support the processes of organizational learning and knowledge management. Technologies such as data warehousing, expert systems, best-practice databases, and intranet/internet systems contained the best packages and tools of organizational learning, memory development and network technologies were used for the access of memory contents (Stein & Zwass, 1995; Kane & Alavi, 2007). Versatility, capacities and capabilities of the Information and communications systems are increasing day by day; they are capturing every aspect of human life, therefore, behaviourist, social constructivists demand the regeneration of organizational learning (Ahmad & Lodhi, 2014; Beauregard, Lemyre, & Barrette, 2015). Information systems are the hubs of information and communications systems (mobile technology) have created integrated networks, which plays the best possible role in facilitating organizational learning by providing subroutines and infrastructure (Sharlanova, 2004).

There is an intuitive connection between organizational learning and information systems. At each stage of organizational life, there are processes that evoke the metaphor of a learning and information system that observes, stores, interprets and institutionalizes this new learning (Tofan, 2013; Hashmi, 2013; Al-Mamary, Shamsuddin, & Aziati, 2014; Nwaocha, 2016). It is best utilized with the help of information system applications and devices which enhance organizational efficiency and effectiveness (Moon, Ruona, & Valentine, 2017; Ahmad, Mahmood, Hussin, & Dahlan, 2016). The role of Information systems (IS) and communication systems (Mobile Technology) is like a heart in the body as it supplies pure blood to all the elements of the body including the brain (Alalwan, Dwivedi, Rana, & Williams, 2016). Different applications and systems have been devised for memorizing and learning, which has minimized the load on employees (Joseph, 2014; Belle, 2016; Conklin, 2001). Information systems and mobile technology have devised supporting tools for learning at the individual and organizational level. Therefore, an information system is expected to fulfil the needs of an individual, a group of individuals, and the management functions for improving performance and decision-making process (Joseph, 2014; Belle, 2016). Socio-technological and various other theories support this whole phenomenon.

Information System and Theory of Planned Behaviours

Theory of planned behaviour addresses individual engagement on certain behaviours in a certain space and time. It states that behaviours are driven by intentions, which are further based on the three constructs of an individual's attitude toward behaviour, subjective norms, and perceived behavioural control (Ajzen, 1991). It guides individual intentions and attitudes toward action supported by favourable social norms.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

High levels of perceived behavioural control are the best predictors for behavioural intentions and planned behaviours. It is in human nature that it adopts all those objects, which are productive, facilitative, provide them better behavioural command and control (Ahmad & Lodhi, 2014; Alhabeeb & Rowley, 2017). Various external stimuli exert their force to change our behaviour voluntarily or involuntarily through stating their assumed usability, utility and better control mechanism. We act for certain reasons, and form a construct which influences our decision (Knabe, 2012; Cameron, 2010). Information systems have now pervaded workplaces in every walk of life and with every coming day, more leaps are made by computer scientists to make and ensure user-machine interaction to be very easy and comfortable. It is now evident from the prevailing practices that even novice users could operate information system smoothly. Information systems, due to their utility, have made the environment eye-catching, interesting and relaxing. A stimulating environment has increased learning intention and readiness. Augmented and virtual realities have reshaped the working and learning environment. Similarly, it has [they have] made our assignments very easy, faster and they have lessened memory load (Fallman, 2007). All three construct's objectives of TPB are met, therefore, it has proved their predictions and intentions for adopting information system (Truong, 2009; Yi, Jackson, Park, & Probst, 2006). Other than the theory of planned behaviour, technology adoption is also supported by the theory of reason action (TRA), Socio-technical Theory, Complementary Theory (CT) and the technology acceptance model (TAM) (Shareef, Kumar, Kumar, & Hasin, 2009).

CONCEPTUAL FRAMEWORK AND RESEARCH HYPOTHESIS

The conceptual model has been taken from the previous studies of Cheon, Sangno, Steven and SongChuang, (2009). (2012). This model best explains the perception and readiness of the individuals in any organization regarding the acceptance of information and communication systems. Attitude towards any behaviour is best defined as how and what someone is feeling when performing a specific task. The individual thinking that the employees considered as important to a certain person should either perform the particular task or not is called subjective norm. The person's thoughts and thinking on whether it is easy or difficult for a certain someone to perform a task or not is called the perceived behavioural control.

The researches show that attitude has the most significant effect on intention (Ajzen, 1991). The second construct, subjective norm is then related to behavioural intention. A person's thinking of behavioural control is directly related to their intention to perform the behaviour. Behavioural control is increased when individuals perceive that they have more resources than the expected obstacles and problems (Ajzen, 1985). According to the technology acceptance model, attitude is dependent upon perceived ease of use and perceived usefulness. Perceived ease of use is described as the people's thinking on the easiness of a particular task if performed while perceived usefulness is on the people's thinking on the usefulness of a certain task if performed. Subjective norm is dependent upon the instructor's and student's readiness. Perceived behavioural control is then dependent upon perceived self-efficacy and learning autonomy. Self-efficacy is the person's beliefs about his ability and motivation to perform specific tasks (A.Hart, Gilstrap, & C.Bolino, 2016). More specifically, individuals who believe that they can master a certain skill or an activity have more intention to perform the skill (Fallman, 2007). Meanwhile, learner autonomy is the extent to which students are responsible and have control over the process of learning with Information System. Autonomy is a major contributor for the acceptance of any system (Shareef, Kumar, Kumar, & Hasin, 2009).



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

The hypothesis is also based on the same model to test and justify the acceptance, readiness and perception of the employees in a learning organization, especially in university, which is considered as a creative and generative workplace and which shapes behaviours through learning. This study tested the following 9 hypotheses:

H₁: Employees' attitude towards organizational learning positively influences their intention to adopt an information system for organizational learning.

H₂: Employees' subjective norm toward organizational learning positively influences their intention to use an information system for organizational learning.

H₃: Employees perceived behavioural control of an information system positively influences their intention to adopt an information system for organizational learning.

H₄: Employees' perceived ease of use of an information system positively influences their attitude to adopt an information system for organizational learning.

H₅: Employees' perceived usefulness of an information system positively influences their attitude towards organizational learning.

H₆: A management's perceived readiness for an information system positively influences subjective norms for organizational learning.

H₇: Perceived employees' readiness for an information system positively influences subjective norms for organizational learning.

H₈: Employees' perceived general ability to operate an information system positively influences their behavioural control towards organizational learning.

H₉: Employees' perceived learning autonomy with regard to information system positively influences their behavioural control towards organizational learning.

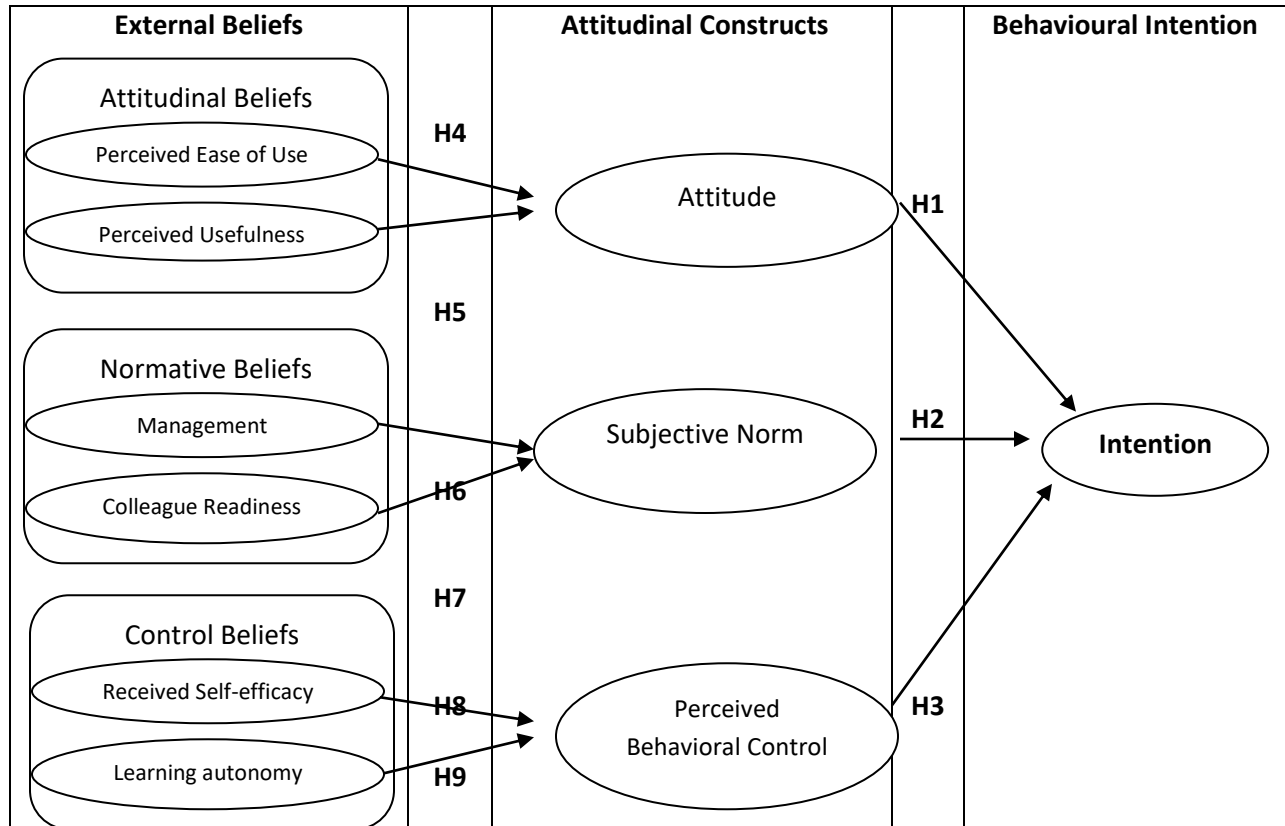


Figure 1: Conceptual Model for the Study (Source: Cheon et al.,2012)

METHODOLOGY

Research Design

The research is designed in such way so that the stated objectives can be achieved. The study was quantitative in nature. The data for this research was collected using self-administrated structure questionnaire developed by (Crook et al., 2012). The targeted population was the employees of a higher education institution. These employees were selected from different departments i.e. computer science, pharmacy, developmental studies, electrical engineering, computer engineering, mechanical engineering, telecommunication networking, civil engineering and the administrative heads and staff of the organization. Convenient sampling method was used to collect data from the targeted population. A convenient sampling technique was adopted on the premise that all those employees working in the learning organization qualify to be included in the study.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

Data Collection Methodology

The targeted population is the employees of higher education institution. The total strength of employees was 800 employees while the sample size for this study is 200. These employees are of different departments i.e. computer science, pharmacy, developmental studies, electrical engineering, computer engineering, mechanical engineering, telecommunication networking, management sciences, environmental sciences, civil engineering and the administrative heads and staff of the university. Convenient sampling technique is adopted for the present study. The research questionnaire was designed, using five points adopted from the Likert scale, [i.e., 1-strongly disagree, 2-disagree, 3-don't know, 4-agree, 5-strongly agree].

Sampling Technique

Convenient sampling techniques remain best when the targeted population fulfil the basic criteria to be included in the survey (Ajzen, 1991). Similarly, in this research study, convenient sampling was selected on the premise that all the participant of the study qualifies the basic criteria to be included in the study, as they were all working in the learning organization. There were 200 participants who work in teaching departments, support office, office of the planning and development, project management office and included Deans of faculties, directors and deputy director, knowledge employees in supporting staff, teaching faculty members and graduate and post-graduate employees who were working as research associates or teaching assistants(internship). All of the participants were actively involved staff in organizational operations and have been exposed to the use of information and communication systems. Inclusion of such a population was based on the premise that they are better proclaimed for the utilization of an information system for organizational learning.

Data Collection

Data for this research was collected by a self-administered questionnaire, using the questionnaire made by (Crook et al., 2012) and through convenient sampling techniques. The assessment consists of 30 queries, with 3 questions for each of 10 constructs. In the inquiry form, due to the sensitivity of the study, a 5-point Likert scale is used ranging the responses from totally disagree to totally agree. High scores indicated more positive perception towards m-learning.

Instrument

Self-administrative questionnaire was used to get the set objectives of the study, which was developed by (Crook et al., 2012). Questionnaire is comprised of 30 items with ten constructs that is extracted from the study's conceptual framework. There were three questions asked for each construct, so as a whole, there were thirty questions in the questionnaire. The constructs include: Perceived Ease of Use, Perceived Usefulness, Attitudes, Management Readiness, Employee's Readiness, Subjective Norm, Perceived Self-efficacy, Learning Autonomy, Behavioural Control, and Intention.

Data Analysis

The data collected from employees was analysed using SPSS (Statistical Package for the Social Sciences) and AMOS (analysis of moment structure). With the help of SPSS, the mean and standard deviation of each question and every questionnaire was revealed and then of Cronbach alpha is used to analyse each construct and all the constructs as a whole with the structural equational modelling technique being completed in AMOS.



FINDING

The following explanation is to present the findings in order to achieve the research objectives.

Table 1

Mean and standard deviation and Cronbach alpha of each construct

Construct	Mean	Standard deviation	Cronbach alpha
Perceived ease of use	5.02	1.66	0.81
Perceived usefulness	4.61	1.60	0.81
Attitude	4.39	1.56	0.84
Management readiness	4.21	1.60	0.81
Employee readiness	4.52	1.53	0.80
Subjective norms	4.47	1.48	0.75
Perceived self-efficacy	4.38	1.51	0.82
Learning autonomy	4.34	1.50	0.79
Behavioural control	4.44	1.55	0.85
Intention	4.47	1.57	0.83

Table 1 showcases the mean result for all the constructs in the questionnaire. It shows that the data are not dispersed but concentrated to the centre of the constructs, which shows data validity, reliability and meaningfulness. At the same time, the values for dispersions are very small, which supports the research's first argument. Next, all values of the Cronbach alpha are more than (.70), which support that the data collecting instrument and variables are valid, reliable and consistent. The highest mean value was 5.02 for 'Perceived ease of use' construct, which means that employees accept information system for organizational learning if they considered the system as easy to use and operate. And the lowest mean value was (4.21), for 'Management readiness' constructs, which states that the head or management role in adopting information system for organizational learning as very low as compared to the factors. The highest variation in the responses was for the construct 'ease of use', which scored (1.66) and the less variation (1.48), was observed for the construct 'subjective norm', which employs that employees were from the same learning organization.

Overall, the findings record the employee's intentions, acceptance, perception and readiness and attitude towards information system for organizational learning. Perceived ease of use scored (5.02), perceived usefulness (4.61), attitude (4.39), management's readiness (4.21), Employee readiness (4.52), Employee readiness (4.47), Perceived self-efficacy (4.38), Learning autonomy (4.34), Behavioural control (4.44) and Intention (4.47) values are higher than mid-point and have scores near to agree and strongly agree, which indicates that most of the respondents have the intention to accept an information system in their working environment. They considered it useful and easy to use and operate.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

Table 2
Model fit indices

Fit indices	Values	Recommended guidelines	References
χ^2	1341.9	Non-significant	lima, 2001; Kline, 2004
χ^2/df	2.8	<3	Kline, 2004; Teaneck& Fidel, 2008
CFI	0.923	≥ 0.90	Hu &Bandler, 1998
TLI	0.911	≥ 0.90	Hu &Bandler, 1998; Kline, 2004
RMSEA	0.066	<0.08(good fit)	Kline, 2004; Donald& Ho, 2002
Standardized RMR	0.147	0.15	Byrne, 1997; Hu &Bentley, 1998; Kline, 2004

Table 2 shows the model fitness and values show the best model fitness. The Model best fit for all variables except X2. Value for X2 = 1341.9, which is more (>) 3 and insignificant and having matching the previous studies conducted by (Lima, 2001; Kline, 2004). All the rest of the statistic are smaller than their targeted values, which shows model fitness and acceptance for the study, and all the conditions were fulfilled for path analysis. In the results, all hypotheses were accepted, which means that there is a greater impact of the independent variable on the dependent variable or results. These results are also consistent with the findings from previous studies conducted using theory of Planned Behaviours (TPB) in different settings and domains, shown in Table No.2. We can conclude easily that attitudinal, normative and behavioural control beliefs greatly influence the acceptance of the information system for organizational learning and favourable conditions support organizational learning with information system.



Path Analysis

The results of path analysis is presented as following:

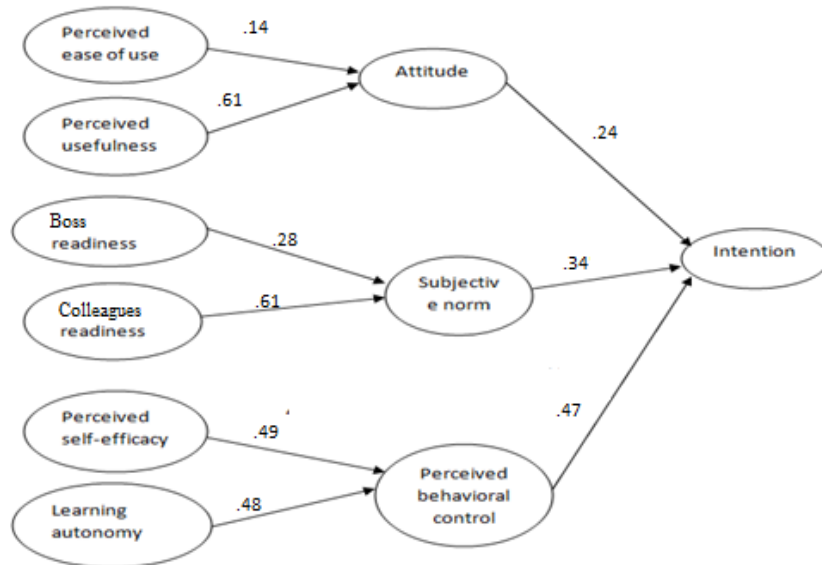


Figure 2: Path analysis

The path analysis diagram above shows that perceived ease of use has 0.14 effects on attitude while perceived usefulness has 0.61 effects on attitude and attitude has 0.24 effects on intentions of the employees to accept information system for organizational learning. Employees’ readiness has 0.61 and Management readiness has .28 effects on subjective norm which alternatively has .34 effects on the intentions to accept information system for organizational learning. Perceived self-efficacy and learning autonomy has 0.49 and .48 effects on perceived behavioural control which has alternatively.47 effects on accepting information system for organizational learning.

Table 3

Hypothesis testing

Estimate	Of	P values
A_T_D <--- P_E_O_U	.14	***
A_T_D <--- P_U	.61	***
S_N <--- B_R	.28	***
S_N <--- C_R	.61	***
B_C <--- P_S_E	.49	***
B_C <--- L_A	.48	***



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

I_N_T	<---	A_T_D	.24	***
I_N_T	<---	S_N	.34	***
I_N_T	<---	B_C	.47	***

Hypothesis Results

Hypotheses proposed in the research were analysed and accepted; known from the P values in Table No.3. Each hypothesis will be explained one by one in the following lines.

- Hypothesis no. 1

According to the values for employee's attitude, 24% of employee's attitude is influenced through organizational learning with information system. Current research shows that if the employees have positive attitude towards organizational learning, it will positively influence their intention to adopt information system for organizational learning. It means that if the worker thinks that information system is useful and easy to use, then they have more intention to adopt the information system for organizational learning.

- Hypothesis no. 2

Subjective norms play 34% role in the employees' readiness and acceptance level for information system in organizational learning in the learning organization. Current research shows that if the worker has the right attitude towards organizational learning then it will positively influence their intention to adopt information system. It means that if the worker thinks that information system is useful and easy to use then they have more intention to adopt it for organizational learning.

- Hypothesis no.3

Perceived behavioural control has the most noteworthy 47% effect in acceptance, use and readiness of information system for organizational learning. This hypothesis is also strongly accepted by our research. It means that in behavioural control of information system, the worker's perception on organizational learning as easy to use will increase their organizational learning.

- Hypothesis no 4

Perceived ease of use has the value of 14% which means that if the worker thinks using information system for learning purposes is easy and they will not face any problem or difficulty while using information system for learning purposes, then they will be more attracted towards it. Thus, this perceived ease of use for learning purposes have positively influenced their attitude towards m-learning.

- Hypothesis no.5

Perceived usefulness with the value of 61%, holds the meaning that if the worker thinks that the use of information system is useful for learning purposes and that their progress will be increased through the use of information system, it will positively influence their attitude towards organizational learning.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Hypothesis no. 6

The values for management readiness is 28%. It means that if the Management of an employee is ready to use information system of organizational for learning purposes and encourages the use of information system for learning purposes then this attitude of him will positively influence the subjective norms; and this hypothesis is strongly accepted.

- Hypothesis no.7

Colleague readiness and influence has 61% effect on the use of information system for organizational learning. This hypothesis states that if a worker thinks that his fellow worker is willing to use information system for organizational learning purposes, they would be more willing to use it as well. This perceived employees' readiness for organizational learning will then positively influence subjective norm for organizational learning.

- Hypothesis no.8

Employees perceived self-efficacy and general ability to having a 49% effect in the use and operating of information system for organizational learning. This hypothesis means that if workers perceive that they have the ability to use information system for organizational learning purposes and they will not face any difficulties while doing this, then his perceived general ability to perform will positively influence their behavioural control towards organizational learning.

- Hypothesis no.9

The last hypothesis state and concludes that learning autonomy with regard to information system has a 48% effect on influence on organizational learning. This hypothesis said that if the employee perceives that he/she has a learning ability and he can have control over the use of information system for learning purposes, then this worker's perceived learning autonomy towards organizational learning will positively influence the behavioural control of an employee towards organizational learning.

In general, these hypotheses conclude that the information system has a positive role in organizational learning and that information system has potentials and utility for perceiving, accepting, readiness and using information system for organizational learning.

DISCUSSION

The purpose of this study was to test and identify the effects of the different factors of the theory of planned behaviours (TPB) that affect organizational learning with the help of information systems and to determine the relationships between these factors. Results show that employees and graduate employees of all levels have an accepting and favourable attitude towards deploying and using an information system for organizational learning. The findings reveal that the employee and their attitudes towards organizational learning with the support of an information system are greatly affected by factors like subjective norms and behavioural control. Multiple perspectives and factors are involved in the adaptation of information systems for organizational learning. The researches show that perceived ease of use and perceived usefulness affect employees and their attitudes towards adaptation of information systems for organizational learning.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

One of the key contributors was the perception of good command and control over the use of the information system, which is measured here by the employees and their behavioural control. Similarly, Self-efficacy and learning autonomy of the employees significantly affect their behavioural control. The study has also been comparing its findings with the previous studies in Table No.4.

Table 4
Comparison with the previous studies

	Hypothesis	Accepted/rejected	Literature support.
H ₁	Employees' attitude towards organizational learning positively influences their intention to adopt information technology	Accepted	(Ahmad & Lodhi, 2014)
H ₂	Employees subjective norm toward organizational learning positively influences their intention to adopt information system.	Accepted	(Hameed, 2014)
H ₃	Employees perceived behavioural control towards organizational learning positively influence their intention to adopt information system.	Accepted	(Kamarehei & Safari, 2015)
H ₄	Employee's perceived ease of use of information system positively influences their attitude towards organizational learning.	Accepted	(Zamir & Park, 2017)
H ₅	Employee's perceived usefulness of information technology positively influences their attitude towards organizational learning.	Accepted	(Ahmad & Lodhi, 2014)
H ₆	Perceived heads/Management readiness for information system positively influence subjective norm for organizational learning.	Accepted	(Goldin, 2014)
H ₇	Perceived employees' readiness for information system positively influences subjective norm for organizational learning.	Accepted	(Crook et al., 2012)
H ₈	Employees' perceived general ability to perform well using information system positively influence their behavioural control towards organizational learning	Accepted	(Ahmad & Lodhi, 2014;Hameed, 2014)
H ₉	Employees' perceived learning autonomy towards organizational learning positively influence their behavioural control towards information system based learning.	Accepted	(Goldin, 2014)



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

CONCLUSION AND RECOMMENDATIONS

The study found major contributing factors which affect the perception and readiness of employees and working graduate employees to adopt organizational learning with the help of an information system. The significant factors were; attitude, subjective norms and behavioural control. It is important for practitioners and researchers to understand what makes end-users accept or resist an information system and how to improve employees' acceptance of information systems for organizational learning. To deploy an information system in any organization, especially learning organizations, the organization should think about long term implementation projects; develop ready-to-use manuals and guidelines, and standard operating procedures for information system usage in different developmental stages. Policies regarding the prevailing organizational system and information system usage should be developed and articulated among employees and working graduates; they should be given orientation and usage training, so that they can feel it easy to operate, and can find it useful and feel that they can control and command the system. The employees' efficiency and effectiveness can be increased through an orientation concerning the information system. As sudden change is not welcomed by every user, an information system for organizational learning should be introduced in phases and its utility should be shown to the employees. A new information system should be within employees' comfort level and they should feel confident and proud in using the latest information system or tool for the organizational process as it enhances their role. In this digital age, we are left with no other option than accepting information systems as a tool, moderator and mediator for organizational learning.

In order to increase employees' positive attitude, meaningful information should be easily accessible by the information system. In addition, available services should be within employees' comfort level of using Information System in order to ensure their confidence. Since instructors and the higher ups significantly influence employees' use of organizational learning, therefore, instructors and the higher ups need to be more familiar with information system and organizational learning. Emerging technologies could resolve the technical limitations of information technology, such as lower resolution, network speed, and platform comparability. However, it would be hard to shift a pedagogical culture to an information system based format. The findings of this study can help in the design of a more user-accepted information system based organizational learning system.

REFERENCES

- A.Hart, T., Gilstrap, J. B., & C.Bolino, M. (2016). Organizational citizenship behavior and the enhancement of absorptive capacity. *Journal of Business Research*, 69(10) , 3981-3988.
- Ahmad, N., & Lodhi, S. (2014). *Role of Knowledge management on organizational performance*. Abbottabad: COMSATS University.
- Ahmad, Mahmood, Hussin, & Dahlan (2016). A concept-level approach in analyzing review readership for E-Commerce persuasive recommendation. *International Journal of Educational Management*, 31 (2) , 131-147.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Ahmad Raees & Lodhi Rizwan Raheem . (2014). Factors Affecting in Selection of School for Upcoming Generation: A Case Study of Karachi Urban Areas, Pakistan *Research Journal of Educational Sciences*, 2(4), 1-7.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior And Human Decision Processes*, 50 (2),179-211.
- Akgün, A. E., Byrne, J. C., Lynn, G. S., & Keskin, H. (2007). Organizational unlearning as changes in beliefs and routines in organizations. *Journal of Organizational Change Management*, 20 (6), 794-812.
- Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Williams, M. D. (2016). Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy. *Journal of Enterprise Information Management*, 29 (1) , 118-139.
- Alhabeeb, A., & Rowley, J. (2017). Critical success factors for eLearning in Saudi Arabian universities. *International Journal of Educational Management*, 31 (2) , 131-147.
- Aljuaid, N. M., Alzahrani, M. A., & Islam, A. (2013). Assessing mobile learning readiness in Saudi Arabia higher education: An empirical study. *The Malaysian Online Journal of Educational Technology* , 2 (2), 44-67.
- Al-Mamary, Y. H., Shamsuddin, A., & Aziati, N. (2014). the meaning of management information systems and its role in telecommunication companies in Yemen. *American Journal of Software Engineering* , 2 (2), 22-25.
- Alzahrani, I., & Woollard, J. (2011). The Role of the Constructivist Learning Theory and Collaborative Learning Environment on Wiki classroom , and the Relationship between Them. *International Conference For e-learning & Distance Education* (pp. 1-9). UK: University of Southampton.
- Aponte, S. P., & Zapata, D. I. (2013). A model of organizational learning in practice. *Estudios Gerenciales*, 29 , 439-444. Retrieved from <https://pdfs.semanticscholar.org/3806/eb6b5a4441bb5f8073a616ca6180c4265d46.pdf>
- Appelbaum, S. H. (2000). *Socio-technical systems theory: an intervention strategy for organizational development*. Canada: Concordia University .
- Argyris. (1976). Single-loop and double-loop models in research on decision making. *Administrative Science Quarterly* , 21 (3), 363-375.
- Arias, J. M., & Solana, J. M. (2013). Information systems supported organizational learning as a competitive advantage. *Journal of Industrial Engineering and Management*, 6(3), 702-708.
- Armstrong, J. (2010). Naturalistic inquiry. *Journal of Organizational Sciences*, 26 (3), 175-189.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Arumugam, T., Idris, K., & Munusamy, K. (2015). Conceptualizing organizational learning system model and innovativeness. *International Journal of Business and Social Science*, 6 (3) 155-166.
- Ashkanasy, N. M. (2016). Why we need theory in the organization sciences. *Journal of Organizational Behavior*, 12 (5), 238-253 .
- B. Whitworth. (2009). A brief introduction to socio-technical systems. *Encyclopedia of Information Science and Technology, Second edition* , 394-400. Retrieved from <http://brianwhitworth.com/2008-STSIIntro.pdf>
- Baek-Kyoo. (2010). Organizational commitment for knowledge employees: The roles of perceived organizational learning culture, leader–member exchange quality, and turnover intention. *Human Resource Development Quarterly*, 4, 57-72 . Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/hrdq.20031/epdf>
- Bandura, A. (1989). A social cognitive theory of action. In J. Forgas & M.. Innes (Eds.), *Recent advances in social psychology: An international perspective* (pp. 127-138). North Holland: Elsevier.
- Bateson, Gregory (1979). *Mind and nature. A necessary unity*. New York: E. P. Dutton.
- Bavarsad, B., Rahimi, F., & Seyfi, M. (2014). A Study of the Relationship between Organizational Learning, Strategic Flexibility, Competitive Strategy and Firm's Performance. *International Journal of Psychology and Behavioral Research*, 3(3) , 198-210.
- Beauregard, N., Lemyre, L., & Barrette, J. (2015). The domains of organizational learning practices: An agency-structure perspective. *Societies*, 5, 713-734. Retrieved from <file:///C:/Users/User/Downloads/societies-05-00713-v2.pdf>
- Belle, S. (2016). Organizational learning? Look again. *The Learning Organization* , 23 (5), 332 - 341. Retrieved from <http://www.emeraldinsight.com/doi/pdfplus/10.1108/TLO-01-2016-0007>
- Birmingham, U. o. (2015). *Learning theories, stages and styles* . Birmingham : University of Birmingham .
- Blackman, D., & Henderson, S. (2013). Does a learning organisation facilitate knowledge acquisition and transfer? *Organizational Behaviors And Develoment*, 1,325-355. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.107.8477&rep=rep1&type=pdf>
- Bloom, S. L. (2010). *Organizational Culture and the Learning Organizations*. USA: Community Works organization .
- Bustinza, O. F., Molina, L. M., & Arias-Aranda, D. (2010). Organizational learning and performance: Relationship between the dynamic and the operational capabilities of the firm. *African Journal of Business Management* , 4(18) , 4067-4078.
- Cameron, K. (2010). Taking engineering document management into the '~OS'. *Computer-Aided Engineering*, 9 (3), 87-89.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Carroll, N. (2012). *Service Science: An Empirical Study on the Socio-Technical Dynamics of Public Sector Service Network Innovation*. University of Limerick .
- Cartwright, S. (2002). Double-loop learning: A concept and process for leadership educators . *Journal of Leadership Education* , 1 (1), 68-72.
- Chiva, R. (2011). *A Framework for Organizational Learning Types: Generative, Adaptive and Zero Learning*: University Jaume Castellón, Spain.
- Cheon J. A., Sangno Lee B. , Steven M. Crooks A , & Jaeki SongChuang, H. H. C. (2012). *Psychological Safety and Group Learning: Cycle-Time Reduction for Collaborative Product Development*. Texas : Texas A & M University.
- Clegg, S. R. (1992). Postmodern management?. *Journal of Organizational Change Management* , 5 (2), 31-49.
- Comfort, L. K. (2013). Organizational learning and change: Evolving systems in a global community. *knowledge management. Organizational Intelligence And Learning, And Complexity, II* , 15-29. Retrieved from <http://www.eolss.net/sample-Chapters/C15/E1-29-04-00.pdf>
- Conklin, P. L. (2001). Recent advances in the role and biosynthesis of ascorbic acid in plants. *Quality*, 32 (12), 46-47.
- Cook, N., & Yanow, D. (2012). Culture and Organizational Learning. *Journal of Management Inquiry* , 2 (4), 355-372.
- Coopy, J. (1998). Learning to trust and trusting to learn: A role for radical theatre. *Management Learning*, 4, 365-382. Retrieved from <http://journals.sagepub.com/doi/pdf/10.1177/1350507698293006>
- Crook, J., Christopher J. O'Callaghan, D. V. M., Graeme Duncan, David P. Dearnaley, Celestia S. Higano, Eric M. Horwitz, Eliot Frymire, Shawn Malone, Joseph Chin, Abdenour Nabid, Pdraig Warde, Thomas Corbett, Steve Angyalfi, S. Larry Goldenberg, Mary K. Gospodarowicz, Fred Saad, John P. Logue, Emma Hall, Paul F. Schellhammer, Keyue Ding, & Laurence Klotz, (2012). Intermittent Androgen Suppression for Rising PSA Level after Radiotherapy. Retrieved from <http://www.nejm.org/doi/full/10.1056/NEJMoa1201546#t=article>
- Cyert & March (1963). *A perspective from organizational economics*. Paper presented for NBER Working Group in Organizational Economics** SIEPR, April 12-13, 2013 Retrieved at <http://web.mit.edu/rgibbons/www/Gibbons%20CM%20at%2050%20v6.pdf>
- Daft, R. L., & Karl E. Weick, K. E. (1984). Toward a model of organizations as interpretation systems. *Management Review*, 9 (2), 284-295.
- Daud, N. R., & Kamsin, A. (2003). *The Study of Learning Organisations in Malaysia*. Malaysia: University of Malaya.
- Eisenberg, D. T. (2016). *The Restorative Workplace: An Organizational Learning Approach to Discrimination*. University of Maryland.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Fallman, D. (2007). Persuade Into What? Why Human-Computer Interaction Needs a Philosophy of Technology. In de Kort Y., IJsselsteijn W., Midden C., Eggen B., Fogg B.J. (eds). *Persuasive Technology*. (pp. 34-45) Berlin, Heidelberg: Springer.
- Feza Tabassum Azmi, (2008). Mapping the learn-unlearn-relearn model: Imperatives for strategic management. *European Business Review*, 20 (3), 240-259. Retrieved from <http://doi.org/10.1108/09555340810871437>
- Fiol, L. c., & Lyles, A. M. (1985). Organizational Learning. *Academy of Management Review*, 10(4), 803-813.
- Ford, R. (2006). Organizational learning, change and power: toward a practice-theory framework. *The Learning Organization*, 13 (4), 495 - 524.
- Frees, W., Acker, W. v., & Bouckaert, G. (2014). *The role of Feedback, Accountability and Learning in Organizational Change and Innovation: A theoretical framework*. Belgium: LIPSE:m the European Union's .
- Gherardi, S., & Nicolini, D. (2001). The sociological foundations of organizational learning. *Research Gate* , 2 (3), 27-60.
- Goldin, C. (2014). A grand gender convergence: Its last chapter - CiteSeerX. *American Economic Review*, 104 (4), 1091–1119.
- Göhlich, M. (2016). Theories of Organizational learning as resources of organizational education. Germany: *Springer Fachmedien Wiesbaden*.
- Goh, H. & Reyan, C. S. (2002). *The SAGE handbook of social anthropology*. Los Angeles: Sage Publication.
- Hameed, N. (2014). *Mobile Learning Readiness in Higher Education in Pakistan*. Abbottabad: COMSATS institute of Information Technology.
- Hieronymi, A. (2013). Understanding Systems Science: A Visual and Integrative Approach. *Systems Research and Behavioral Science* , 2 (4), 580–595.
- Jacky, H. (2003). Researching organizational learning: diversity of modes and methods. *Organizational Learning and Knowledge* . China : University of Macau.
- James, G. March, J. P. (2006). The uncertainty of the past: organizational learning under ambiguity. *European Journal of Political Research*, 3(2) , 147–171.
- Joseph, M. (2014). *Reference memory, working memory and adaptive forgetting : A comparative study in rats*. Lyon : Universit´e Claude Bernard.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Kalmuk, G., & Acar, A. (2015). The Mediating Role of Organizational Learning Capability On The Relationship Between Innovation and Firm's Performance: A Conceptual Framework. *Procedia - Social and Behavioral Sciences*, 2 (4), 164 – 169.
- Kane, W., & Alavi, T. (2007). Organization learning. *Annual Review of Sociology*, 14 (3) 19-40.
- Kantamara, P., & Ractham, v. v. (2014). Single-loop vs. double-loop learning: An obstacle or a success factor for organizational learning. *International Journal of Education and Research* 2 (7), 55-63.
- Kamarehei & Safari (2015). The link between individual and organizational learning. *Management Review*. 2 (3), 37-50.
- Knabe, D. (2012), The factory as a learning laboratory. *Sloan Management Review*, 2 (3) Fall, 23-38.
- Kolb, A. Y., & Kolb, D. A. (2008). *Experiential Learning Theory: A Dynamic, Holistic Approach to Experiential Learning Theory: A Dynamic, Holistic Approach to Management Learning, Education and Development*. Cleveland: Weatherhead School of Management.
- Kolb, D. A., Boyatzis, R. E., & Mainemelis, C. (1999). *Experiential Learning Theory: Previous Research and New Directions*. Cleveland: Department of Organizational Behavior Case Western Reserve University.
- Lalli, A. (2014). Organizational learning Theoretical Framework. *Journal of Educational Psychology*, 4 (5), 65-78.
- Law, K. M., & Chuah, K. B. (2015). *Organizational Learning as a Continuous*. DELO.
- Levitt, B., & March, J. G. (1988). Organizational Learning. *Annual Review of Sociology*, 14, 319-340. Retrieved from <http://www.annualreviews.org/doi/abs/10.1146/annurev.so.14.080188.001535>
- Li, C.-H. (2016). From adaptive to generative learning in small and medium enterprises-a network perspective. *Journal of Global Entrepreneurship Research*, 6 (11), 1-12. Retrieved from <https://journal-jger.springeropen.com/track/pdf/10.1186/s40497-016-0054-y?site=journal-jger.springeropen.com>
- March, J. G., & Simon, H. A. (1958). *Organization*. Virtual University, Pakistan.
- Meyer, R. E., & Höllerer, M. A. (2014). Does institutional theory need redirecting? *London: Sage Publication*.
- Moon Hanna, Ruona Wendy, & Valentine Tom. (2017). Organizational strategic learning capability: Exploring the dimensions. *European Journal of Training and Development*, 41 (3), 222-240.
- Otilia, Cristian-Valentin, Ruxandra, & Aurel. (2014). Dimensions of the learning organization within pharmaceutical companies in Romania. *Proceedings of the 8th international management conference*. Romania : Ștefan cel Mare University of Suceava.
- Palthe, J. (2014). Regulative, normative, and cognitive elements of organizations: implications for managing change. *Management and Organizational Studies*, 1 (2), 59-68.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Rescher, N. (2003). *Epistemology: An Introduction to the Theory of Knowledge*. New York: State University of New York.
- Richard L. Daft & Karl E. Weick. (1984). Toward a model of organizations as interpretation systems. *The Academy of Management Review*, 9 (2), 284-295.
- Sampe, R. (2102). A conversation with Peter Senge. *New Developments In Organizational Learning Organizational Dynamics*, 27 (2), 33-42.
- Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Currency Doubleday.
- Savolainen, T., & Haikonen, A. (2016). Dynamics of organizational. *Siteseer*, 3(2), 322-347.
- Sawyer, S., & Jarrahi, M. H. (2013). *Sociotechnical approaches to the study of Information Systems*. USA: Syracuse University.
- Schulz, M. (2001). *Organizational Learning*. Washington: University of Washington.
- Scott, B. B. (2011). *Organizational Learning: A Literature Review*. Australia: IRC.
- Seirafi, K. (2012). Organizational Epistemology: A normative understanding of knowledge in organizations. *Philosophical foundations and implications for researchers and practitioners, Berlin Heidelberg: Springer-Verlag*.
- Shareef, M. A., Kumar, V, & Hasin, M. A. A. (2009). Identifying critical factors for adoption of e-government. *International Journal* 6 (1), 70-96.
- Simon. H. A. (1991). Organizations and markets. *Journal of Economic Perspectives*. 5 (2), 25-44).
- Spender, J.C. (2009). Organizational Learning and Knowledge Management. *Management Learning* ,39 (2), 159-178.
- Starbuck, W. H. (2017). Organizational learning and unlearning. *The Learning Organization*, 24 (1) , 30-38.
- Garvin, D. A. (1993), "Building a Learning Organization," Harvard Business Review, July-August, 78-91 .
- Stein, T. & Zwass, T. (1995). *The learning organization from the perspective of the evolutionary epistemology*. Austria : Jägerhausgasse.
- Sun, R. (2012). Introduction to Computational Cognitive Modeling. *Inaternational journal of Computational Sciences* , 4 (6), 11-34.



MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

- Tennis, J. T. (2012). Epistemology, Theory, and Methodology in Knowledge Organization: Toward a Classification, Metatheory, and Research Framework. *Knowledge Organization*, 35 (2), 102-112.
- Tofan, C. A. (2013). The management of the informatics systems projection. *Review of General Management Brasov*, 10 (2) . Retrieved from <https://www.sciencedirect.com/science/article/pii/S2212567115015725>
- Truong, Y. (2009). An evaluation of the theory of planned behaviour in consumer acceptance of online video and television services. *Electronic Journal Information Systems Evaluation*, 12(2), 177-186.
- Veisi, H. (2010). Organizational learning in the higher education institutions (a case study of agricultural and natural resources campus of University of Tehran). *International Online Journal of Educational Sciences* , 2 (1), 21-36.
- Virtual University. (2012). *Learning Theories*. Lahore: Virtual University, Pakistan.
- Weick, Karl (1979). *The Social psychology of organizing*. Berlin: Addison-Wesley Publishing Company.
- William N. Issacs. (1993). *Talk flight: Dialogue, collective thinking, and organizational learning* . Retrieved from <http://www.questsandsummits.com/Taking.pdf>
- William Van Buskirk & Dennis McGrath. (1992). Organizational stories as a window on affect in organizations. *Journal of Organizational Change Management* , 5 (2), 9-24.
- Wiseman, E. (2007). The Institutionalization of Organizational Learning: A Neoinstitutional Perspective. *Proceedings of OLKC* (pp. 1112 -1137). McGill University.
- Yi, M. Y., Jackson, J. D., Park, J. S., & Probst, J. C. (2006). Understanding information technology acceptance by individual professionals: Toward an integrative view. *Information & Management*, 43(3), 350-363.
- Yousef, B., Mai, O., Ra'ed, M. A.-S., & Tarhini, M. A. (2016). Knowledge management, innovation and firm performance. *ournal of Knowledge Management*, 9 (3),101-115.
- Zamir, Z. B., & Park, I. (2017). The Impact of Knowledge Capture and Knowledge Sharing on Employees' Outcomes. *global, international, and cross-cultural issues in IS*, 40 (4), 95-117.