

The Effective Contributing Factors in Knowledge Sharing and Knowledge Transfer among Academic Staff at Tehran University of Medical Sciences: A Qualitative Study

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Abstract

Background: Knowledge transfer is known as a core process in knowledge management. Its decent and influential function in organizations would result in regeneration and innovation of knowledge. Due to this importance, the most recent research in knowledge management has been inclined toward knowledge transfer concept. We aimed to investigate the most influencing contributing factors in knowledge transfer and knowledge sharing within the faculty members at Tehran University of Medical Sciences.

Method: This investigation has been conducted with a qualitative approach using grounded theory. Data were collected using semi-structured interview with 17 faculty members of ten distinct departments of Tehran University of Medical Sciences. The data has been transcribed and analyzed.

Results: By carefully analyzing the interviews from 272 preliminary open codes after sequential analogies and induction, 54 concepts have been extracted that were categorized into one of eleven classes constituting the effective items and factors in knowledge transfer among faculty members, respectively. These categories could be placed into , non-communication factors and communication factors. The non-communication factors were knowledge actors (professors), organization (university), the knowledge, and surroundings. The communication factors are the factors that are formed in the dual relationships between the relevant factors.

Conclusion: A decent knowledge flow in working groups and collaborative societies of faculty members within a department or through different university departments would lead to a better research and education management. This could also bring about some advantages: the research in each department falls in a well-defined, pre-missioned channel, avoiding scattered research works, and enhancing the training and research. The awareness of university senior managers about influencing contributing factors of knowledge transfer and their functions provide a robust panel for tracing the knowledge flow and help them establish the knowledge flow for production and regeneration of genuine knowledge.

Keywords: KNOWLEDGE TRANSFER, KNOWLEDGE SHARING, KNOWLEDGE MANAGEMENT, SCIENTIFIC KNOWLEDGE FLOW

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Introduction

Knowledge in all its forms, as a pure and valuable

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investment in the minds of scarce human resources, such as creative entrepreneurs, from the point of view of economic, social, cultural, political and organizational has been focused on the attention of the creative leaders in the twenty-first century, whose creation

and reproduction of it depends on sharing and clever transfer within and outside the organization.

Knowledge and Knowledge Management

Knowledge is a social and complex concept. More than the concept of an object can be assigned to it; it involves a process. Knowledge includes experiences, values, expert insights and evidence-based information (1) Knowledge is combined with experience and conditions, interpretation and thinking (2). Knowledge is a renewable resource that is stored and reproduced by being used by the staff and combined with their experiences. Knowledge is a capacity for effective action, hence the result of knowledge is improvement. Knowledge is organized, combined, or summarized information to improve understanding, awareness and comprehension (3). Siemens, with his communicative view, believes that “knowledge is based on the connections we make.” The links that we create with other people and the resources, information and databases are learning or “knowledge” (4). Therefore, the most important feature of knowledge is its dynamism, its sociality and its relevance, which in turn emphasizes the importance of the transfer and sharing of knowledge in the processes of knowledge management. Efforts to acquire hidden assets in the minds of individuals and turn this hidden wealth into organizational assets, so that a wide range of people involved in the organization’s decision to access and use this wealth are defined as knowledge management (1) . Knowledge management is an essential requirement for organizations and includes the management, operation, and development of knowledge assets of an organization, with the aim of improving the organization’s performance (5). Knowledge management at each level in its most important stages involves aspects of knowledge sharing and transfer. The significance of this concept is that knowledge sharing and transfer are at the heart of many

knowledge management patterns (6-11).

Knowledge Sharing and Knowledge Transfer

Knowledge sharing is a process through which individuals exchange their knowledge, individual knowledge becomes organizational knowledge, and potentially provides the opportunity to learn new experiences and implement skills and abilities (12). Knowledge sharing refers to the provision of information about a task and how to help others and work with them to solve problems, develop new ideas, and implement policies and procedures. Knowledge sharing can be done through written communications or face-to-face communication through networking with other experts, documenting, organizing, conquering knowledge for others (13). Knowledge sharing is a key to increasing the transfer and dissemination of knowledge (14). Knowledge sharing is a social phenomenon that includes personal relationships and social interactions (15). The purpose of knowledge transfer is to increase the organization’s ability to do things and ultimately increase its value (1). Knowledge transfer is defined as the learning of an organizational unit from another unit’s experience (16). Knowledge transfer defines the exchange of knowledge (how to do work, skills and technical information) from one person or position to other persons or situation (17). Knowledge transfer affects an individual or department through the experience of other people or sectors (18). Knowledge transfer is a process in which information and skills are exchanged between individuals systematically (19) . Cabrera and Cabrera (2005) consider knowledge transfer to be a subset of knowledge. Knowledge transfer involves the sharing of knowledge through the source of knowledge and its acquisition and application through the recipient, which is generally used to describe the transfer of knowledge between different units of the organization rather than individuals (13). But, the transfer of knowledge, both between individuals and between groups and sectors, involves both the transfer of knowledge to the

recipient and its absorption by the recipient. Therefore, it is a process that in addition to sharing knowledge, involves ensuring the absorption of knowledge by the recipient and re-evaluating knowledge, and is more conceptual than process knowledge sharing.

The Missions of Today's Universities

Today's universities are not only a social institution, but also on the path to becoming a communications and networking institution (20). Currently, given the globalization and internationalization of universities, a new method of knowledge generation is emerging that is called the next dimension of knowledge. In the traditional way, more issues based on the interests of academics occur and are analyzed; while in the new method, knowledge is product in a practical and intermediate context and in teams that include members with varying and unmatched expertise with fewer hierarchies and temporary structures and it is more socially responsive (21). Science should be a collective effort in which everyone contributes to it (22). Therefore, the mission of the universities in this century to purely produce social knowledge, will not be possible except through the transfer and dynamic knowledge sharing; its good performance depends on the successful functioning of the knowledge transfer process within the university. In recent years, the issue of transferring internal knowledge between and within college and faculty, as well as transferring knowledge across the boundaries of the university and from university to society and industry has been the subject of research by researchers.

Research Background

Nejat and colleagues (2008) in reviewing the transfer of knowledge from research in Tehran University of Medical Sciences, studied the behavior of researchers of this university in the activities of knowledge transfer. They reviewed 301 research proposals and concluded that academics aimed solely at disseminating

their research results in order to generate knowledge, and do not pay much attention to making changes by knowledge. Therefore, in order to create a link between knowledge and practice, changes in the incentive and university performance evaluation are needed and consideration should be given to budgeting in research projects (23). The issue of knowledge transfer at the borders of medical universities has also been the subject of research by other researchers such as Nemati Anaraki and Noshinfard (2013) (24), Sedighi and colleagues, (2007) (25), Alipoor Darvishi and Dolat Abadi (2012) (26);, and Ahghari, Maleki, and Nejat (2009) (27). But the cross-border transfer of knowledge requires a good knowledge transfer within the organization. University professors are the most important pillars within the academic organization, because of their two educational and research tasks, their development and enhancement is also discussed in a coherent approach to two areas of professional knowledge and teaching experiences during the teaching process. A group of professors will successfully succeed in transferring knowledge for industry and community use, which will be primarily successful in transferring and sharing knowledge within their group or faculty. However, knowledge in these two interconnected areas is also a social phenomenon that is produced and reproduced in the context of its transmission and it will occur in the context of working communities and real and virtual social communication. This means that the initial condition for the re-production of knowledge is transferring it between individuals. Such tacit knowledge is highly personal and transmitted through special techniques.

Therefore, in the process of the development and advancement of university professors, the transfer of knowledge between experienced professors and newcomers or the extraction of knowledge from the faculty who leave the university and transfer it to others, as well as increase the quality of teaching, especially

in interdisciplinary fields is one of the most important aspects in the field of knowledge management and human resource management is the University and should not be expected to be directed as a self-sustaining process. Knowledge management in higher education is as important as corporate segments, as it improves the ability to make decisions and improve academic performance and reduce costs (28).

On the other hand, educational organizations have a special aspect due to their multiple scientific and cultural dimensions, in addition to sharing with other organizations, which distinguishes them from other organizations. Therefore, it is necessary to specifically focus on the transfer and sharing of knowledge in academic fields. In a research conducted by the faculty members of the Research Council of Natural Sciences and Engineering University of America, it was found that there are differences in knowledge transfer policies both in knowledge activities and in colleges, and factors such as the relationship between researchers and users. Commercial profitability and intellectual property, the further transfer of non-commercial knowledge, the time allocated to education, the dependence on the great research university, the difference between the researcher and the professors, the knowledge assets, the allocated budget, the grants, and the size of the research unit should be considered (29). Antal and Richebé (2009), examined the use of social exchange and gift exchange and qualitative knowledge sharing between professors at two universities in France and Germany and found that the sense of value creation in the source of knowledge, as well as the knowledge and language shared and understood by the learner and enjoyment and the emotional dimension of the theory of social exchange and satisfaction on both sides, along with the management of time and space, and formal and informal activities and incentives for participatory behavior can facilitate the sharing of knowledge (30). Khalil and Shea (2012) examines barriers to

knowledge transfer between faculty members at the University of Massachusetts (31). The most important barrier to knowledge transfer was the barriers to knowledge sharing at the college, namely personal capacity limitations, inadequate organizational capacity, fear of knowledge disclosure and fear of the nature of knowledge and its nature. Agarwal, Kiran, and Verma (2012) examined the factors of sharing knowledge among the professors of 30 universities and found that regular updates of databases, documentation of lessons learned such as educational books, articles for publication, and internal lectures, sharing through the Internet and knowledge sharing committees, culture, and web-based technologies are among the most important factors (32). In addition, other researchers also examined the factors affecting knowledge sharing at universities (33-35). Muniz (2013) reviewed the transfer of knowledge from retired professors to other professors and provided a nine-step program for a successful knowledge transfer (36). Fullwood, Rowley, and Delbridge (2013) by examining the transfer of knowledge among professors in eleven United Kingdom universities has revealed significant factors at the level of attitude toward knowledge sharing, seeing improvement in performance, and differences in various academic departments (37).

With respect to recent studies, especially in medical universities, it is observed that the study of knowledge transfer between the faculty members of a faculty and faculty members of different faculties has been less attention by researchers. However, in the field of education, changes such as the movement of the academic community towards interdisciplinary and the attitude of holism have doubled the need for teachers to interact from different faculties in education and research. Also, the departure of experienced professors in the process of retirement has created the necessity of transferring knowledge from the sources of knowledge to other professors. In the field of research, in order to prevent the dispersion of work and the movement of academic

community in a targeted scientific path, the need for interaction between the professors and the sharing and transfer of knowledge between them and the establishment of good knowledge of knowledge is felt.

In addition, the need for scientific, professional and even management decisions based on the best scientific evidence requires the scientific search and the creation of a flow of transfer and sharing of good and successful knowledge. There are several factors that affect the processes of consciously transferring and sharing knowledge between the professors. Identifying these factors and how it affects the process of knowledge transfer has been a concern for researchers of this paper. Because identifying and reviewing these factors will set out guidelines for senior university executives to continuously ensure knowledge flows between faculty members through their knowledge of the functions of these factors. Therefore, the purpose of this study was to investigate the factors affecting knowledge transfer between faculty members of Tehran University of Medical Sciences and attempt to answer the following questions.

1. What are the Main Dimensions Affecting Knowledge Transfer of knowledge transfer between faculty members of Tehran University of Medical Sciences?
2. What are the components of each of the effective dimensions of knowledge transfer?

Research Method

This research approach is qualitative research and grounded theory method has been done. The grounded theory instead of theoretical assumptions, gives priority to the data in the field of study. The theory is discovered and formulated through work on data and in the field of study. In this type of research, the goal is not to reduce complexity by analyzing the problem into several variables but also increasing the complexity by adding the underlying information to the analysis (38). The grounded theory is a “inductive” methodology of explore the theory that allows

the researcher to develop a theoretical report of “general features of the subject” (39). In this study, the research direction is based on “systematic approach” provided by Strauss and Corbin (1998), consists of four phases and was 9 steps (40).

Phase one: Research plan: Step 1: Review the specialized texts; Step 2: Select the items (sampling methods). Phase two: Data collection: Step 3: Compile precise drafting of the data collection (Interview, View, upstream documentation); Step 4: Enter to the field of research; Step 5: Set up the data. Step three: Data analysis: Step 6: Data analysis (including coding and ...); Step 7: Theoretical sampling; Step 8: Process end. Phase Four: Comparison with Theoretical Texts: Step 9: Comparison of Theory Formulated with Existing Texts.

In the first step, which includes setting the goal, defining predetermined structures and expressing the research question, to restrict and determine the focus of the researcher. After theoretical studies, the philosophy of research was based on communication theory, the theory of networks and the theory of social capital. The aim of the study was to find the dimensions and components that affect the transfer of knowledge in a more applied model in Tehran University of Medical Sciences. Then the sample was qualitatively based on the relevance of the research subject to the sample size of 12 subjects selected from ten colleges and continued to reach theoretical saturation with 5 others, and finally the sample size reached 17 subjects. In the next step, the researcher personally focuses on the problem-oriented and semi-structured interview and, following the ethical principles of qualitative research and full satisfaction of the interviewee, the interview was recorded, and, the researcher made every effort to follow the principles of a good and deep interview. In the next step, the text of the interviews was accurately completed and the interpretation and analysis of the data was done by using open coding as paragraph to paragraph. Axial coding involves the process of linking subcategories

to more basic categories. This involves a complex process of inductive and deductive thinking that lie within a few steps. After open coding, axial coding while maintaining the sensitivity of the comments were made by the researcher. Since the formation of the grounded theory does not follow a linear process, it is necessary that the scholar motion repeatedly to produce categories between data and categories by deductive method and regularly repeats a theoretical sampling of data to achieve theoretical saturation in each category. Therefore, as explained in step 6, this process was completely carried out to theoretical saturation of the categories. In this way, the theoretical basis of the work was prepared. At the last step, a formed theory with similar and contradictory frameworks was compared to guarantee the external validity and the generalizability of the theory.

Internal Validity

In this study, internal and external validity is not meaningful in the sense used for quantitative research, but, it is better to use the term “reliance” as a substitute for internal validity and validity. Reliance includes two concepts of reasonableness and usefulness. If the findings are robust and include a clear diagram, they will also be precise, stable, and coordinated. In fact, the reasonableness and accuracy of the findings increases internal validity. In this study, we used the two criteria provided by Glaser and Strauss named “matching” and “comprehensibility”, to evaluate the findings as reasonable. In order to validate the design, in addition to repeated comparisons, the findings were arranged in a tabular form of knowledge transfer components and presented to the interviewees and their views on the importance of each component were received and, according to the experts, the necessary changes applied. Most of the interviewees considered the components to be part of the interview data and easily understood the relationship between the components of the model and made it reasonable. The views of

the professors of the University of Tehran were also used to determine the comprehensibility of the explanation and description presented. The results and findings of qualitative research are based on reality because they are derived from the actual context of life (41); Therefore, they are usually useful to the research community.

Results

Open coding was done in paragraphs as paragraphs. Finally, out of a total of 17 interviews, 272 primary open source codes were obtained. After verifying the results and subsequent induction and deduction, 53 the classification and the concepts resulting from the eleven categories were assigned. The categories have been investigated according to communication theory to two general categories of non-communication factors and communication factors (Tables 2 and 3).

Discussion

1. Knowledge Actors

Among the factors affecting the transfer of knowledge between professors was knowledge factors with the abundance of 17 had the highest frequency and their impact on sharing knowledge was maximized. Although technology systems can be effective in knowledge transfer, people who are managing the knowledge are also important (42). Psychological factors such as motivation, personality, emotions and anthropological factors such as attitudes, individual values, and the desire for autonomy in work and psychosocial factors such as communication in group interactions, power-seeking, and the degree of individualism and the most important individual factors was in this field. A number of interviewees referred to the need to change people’s attitudes.

Attitude; Personality; Motivation; Mental Norms

“The major part of the problems in this regard

Table 1. Non-communication factors in transferring knowledge among university professors

No.	Dimensions	Concepts (components)
1	Knowledge actors (university professors)	Attitude towards knowledge transfer and sharing Motivation Personality Mental norms Individualism The desire of professors to independent education and research A culture of awareness of the necessity of knowledge transfer
2	The nature of knowledge	Knowledge Dynamics The type of transferable knowledge Diversity of knowledge at the university The roots of knowledge at the university
3	University as an organization	Structure Senior management support Technology Infrastructure Organizational Culture
4	Surrounding	Outside variable environment of the university Social interaction tools Time

is the attitude of the professors, the sense of knowledge ownership in the professors due to the sense of their lack of information security; of course, some of the problems are legal” (Code 3).

“The retired professors did not have a good relationship with us, their attitude was to lose sight of power” (Code 7).

The Desire for Academic Independence

“Professors tend to be private in their field of research and education ... There is no awareness and change in attitudes in policy making in the organization” (Code 5).

Community Relations

“Extroversion, socialization and management of relationships with others is important, no matter how a literate teacher, but it cannot morally deal with others, it will eventually fail” (Code 14).

Researchers have found that the level of professors’ attitudes toward knowledge transfer and sharing is the most important factor (36, 37, 43) personality traits of self-efficacy and pleasure of helping others (44) facilitate this process. On the other

hand, lack of motivation can be one of the most important psychological features are considered to hinder the sharing of knowledge (13, 45). Strong people connections and good network connections (45) are the foundation of a strong social capital (44) that supports the knowledge flow. But what is certain is that the behavior of university professors in effective transfer of knowledge is strongly influenced by organizational factors and the type and nature of transferable knowledge and environments such as time and space (Figure 1). Such characteristics are due to the role of individuals in the workplace has emerged.

Common Language

“... Professional alignment is the most important factor; we need to translate knowledge into a common language.... (Code 9).”

Educational Science

“... We have been devoting grants to educational development projects since 2005; there is a process that puts people in a scientific track based on the best evidence; also, we have held workshops for professors to familiarizing them with educational scholarship (Code 12).”

Table 2. Communication factors in knowledge transfer between university professors

No.	Dimensions	Concepts (components)
5	Actors - Knowledge	Common language (scientific and professional association of professors) Ownership of knowledge and its rights Quick feedback on knowledge transfer Hoarding of Knowledge-Power Educational Scholarship (Using the Best Evidence) Assist system
6	Actors - University	In-group and out-of-group collaboration Specialist knowledge sharing sessions Educational and Research Councils System of incentives and promotion rules Retirement Rules
7	Actors - Surrounding	International scientific activities Searching for World Knowledge Using Knowledge Transfer Tools Distance education and virtual education
8	Knowledge - University	Change in lessons and training units Documentation of educational experiences Documentation of research experiences Appointment of Managers with Knowledge View The priority of training on research Use the Thought Room and Freedom of Thought
9	Knowledge - Surrounding	Purposefulness to generate knowledge transfer of cross-border knowledge Innovation Short half-life of knowledge
10	University - Surrounding	Managers' decisions based on best global evidence University relationship with industry and society Politicization Action plan Financial and budgetary issues
11	Knowledge intermediates (Certified Professors)	Intermediaries are observers of communication channels of professors Intermediaries are the partners of the knowledge transfer strategy with university strategy Intermediaries and institutionalization of knowledge transfer Intermediaries and tools for managing communication and time

Assist System

"... We have an unwritten law for a period to assist new professors; there is a degree of formalization there; sometimes we had to approve these unwritten rules at the college."

"There is a program called" peer review "for educational excellence, but viewing peers is a static view; at one time, it has a kind of inspector; while the auxiliary system is a dynamic observation over time and aimed at training" (Code 7)

"If we are targeted at work, we are looking

for alternative education, and we care more about a system of assisting and transferring knowledge from retired professors to young people, while most people are individualistic, do less teamwork, and, we have a few people with an altruistic and purposeful view" (Code 5).

In the relationship between "teacher-knowledge", facts such as the creation of a good assistant system, the use of educational scholarship to improve the educational situation of the college in the educational

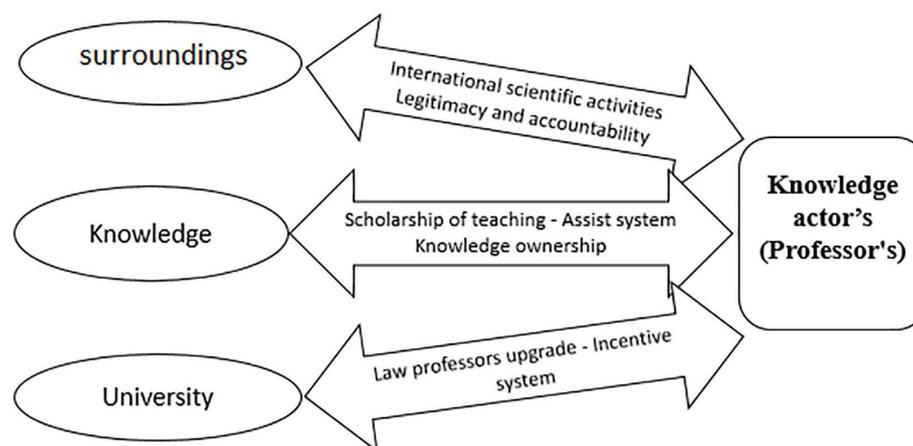


Figure 1. Relationship factors that arise due to the relationships of professors with the college, knowledge and comprehensive

groups where individuals with a common scientific language are present, enhancing the faculty's academic ability, and observing quick feedback of this kind of knowledge sharing will increase their willingness to continue such a process. This is not just knowledge that should be considered, but the faculty as an organization also influences the attitudes of their professors and their behavior.

Promotion Rules and Campus Incentive System

"The upgrade rules have hurt the education; a professor puts more value on research and takes it from the classroom aspects, so that students feel it." (Code 3).

"The upgrade requirements coerce lead the person towards research" (Code 5).

"The school facilitation system and promotion laws reinforce individualism and not encourage group and team activities" (Code 17).

Although the most important achievement of the current promotion and the production of science was as a clear and documented knowledge, it seems that an effort to prepare the faculty for good team or team interaction needs to be matched with a good incentive system that, in addition to individual efforts, is rewarded with group activities; in such a way that the rules for the upgrading of professors not only do not harm the educational process or theft, but also encourage the transfer and

sharing of knowledge between professors. In addition, to the publication of explicit knowledge, tacit knowledge of professors will also be exchanged in group interactions. The motivation to share knowledge is a central role in the transfer of knowledge (45). While some researchers, such as Bock and Kim (2001), have denied extramural and economic rewards to a good knowledge transfer (46), some also found performance-based pay to be a good reward for sharing knowledge (44). In general, group incentives will play a special role through the mechanisms for motivating knowledge actors in the transfer and sharing process. Strengthening colleges in this kind of team-based interactions will provide a solid foundation for inter-university and international collaboration. Such factors relate to the relationship between "faculty-outside the college" and even peer-to-peers through communication tools that translate knowledge. Responses to the environment and the acquisition of legitimacy are also factors that relate to individuals in the context of knowledge transfer.

2. Faculty and Its Management

About the Faculty, concepts such as structure, organizational culture, the support of senior managers of knowledge transfer, and the technology infrastructure and university strategies in transferring knowledge as

components were known.

School Management

“The organization is the most basic factor in the transfer of knowledge because the knowledge ceiling of the organization is determined by administrators; maintaining the professors in the twists and turns of the methods will make them routine, while the process of developing the knowledge transfer and knowledge transfer and the liberation of ideas will lead to prosperity and excellence” (Code 2).

A senior manager has the ability to make changes in the organization’s atmosphere and culture to support knowledge management. A positive culture with strong social interactions (44) will bring the individual into the college’s knowledge, and the lack of appropriate culture, even with the establishment of good information technology (IT), will also be problematic in the process of knowledge transfer (13, 47).

The Atmosphere of Organization Culture

“The atmosphere of the groups is important. The informal atmosphere that managers often create may be collaborative, supportive, or dictative that directly affects the incentives for knowledge sharing” (Code 7).

“Culturally, people think it’s better if they keep the information” (Code 10).

“Cultural preparedness at the individual and group level is another aspect of the field’s preparation” (Code 9).

Teamwork in the organization(13) , organizational trust (48, 49); including trust in managers and trust in colleagues; and the existence of norms of the use of altruistic knowledge;(50) leading to an increase in individual and organizational trust and, in turn, prompted the establishment of culture Collectivism will create a more fluid transfer of knowledge. Developing corporate citizenship ethics and good perception of teamwork and individual and organizational trust is a

prerequisite for a good knowledge flow, while individualism is a major barrier to this.

“No one is worried about the promotion of his colleague; in this place people are the self-centered, quantitative in the production and publication of articles” (Code 7). *“The spirit of group work must be taught in the family and school; we have individualist culture, and this hinders the sharing of knowledge”* (Code 2).

In knowledge management studies, less attention has been paid to managerial and strategic aspects (51); However, managers manage the levers of cultural change, and they can use it through the design and monitoring of formal channels of thought exchange; the design of an effective education system to increase the level of people’s attitudes and the provision of methods and ensuring the functioning of knowledge transfer processes within the college and between colleges in this regard to institutionalize. However, nowadays, in the fifth generation of knowledge management, strengthening the technology infrastructure is no longer a problem, but the management of these systems is highly emphasized.

Faculty Technology Infrastructure and KM Development Programs

“Our equipment and tools are sufficient; we have the necessary training and support; on the shoa site, we have a section entitled” Knowledge transfer that remains unused “; its facilities are available but not obligatory to use”. (Code 9).

The Faculty’s technology infrastructure includes the design and monitoring of IT programs and their application by the professors at the faculty, as well as strengthening the e-knowledge transfer mechanisms between professors. It is necessary to design and implement a comprehensive program of knowledge management development in the organization. Hence, a knowledge management development program is required (48), and even to implement a good knowledge transfer, the necessary permissions are issued(45) .

There is no organization in the vacuum, in connection with the “campus-environs”, there are factors that are remarkable. Knowledge is not produced for knowledge and is not upgraded to its very nature. The flow of knowledge generation is purposeful. Knowledge will be useful and improved wherever it is produced and used by industry and society.

In this research, the components that are presented in the context of the University with environments include: decision makers based on the best scientific evidence, maintaining and strengthening the university’s relationship with society and industry, realistic operational planning, avoiding policy making and budget planning and supporting financial support for management and knowledge transfer.

Relations with Community and Industry

“... sometimes we do not seek the end and the result of knowledge; the production of knowledge is not for knowledge; it has commercial, economic or transcendental ends” (code 3).

“... When the Ministry of Health focused on the issue of “guidelines” seriously, our cooperation with the Office of Assessment and Treatment Technology began and we were going to start the “Guide lines of datasheet” in dentistry, due to the fact that the office’s

knowledge management was formed in several dental schools ... “(Code 1).

“Since 2013, the Tehran University of Medical Sciences has been selected as an international collaborator of best-practice education in Asia and the Eastern Mediterranean region. In order to help to produce science and produce the best evidence. “... We are members of the Knowledge Transfer Committee. ... The most important discussions among members of the committee are the provision and production of best-evidence based guidelines on major medical issues. “(Code 12).

The ultimate knowledge is determined by the needs of the community. An effective knowledge management designs the scientific pathway to achieve these goals with the necessary flexibility from the perspective of future prospects, coordinating structures, laws, processes and individuals in the right direction. In this research, in the “knowledge-university” communication, there are some concepts such as student curriculum changes, the priority of teaching on research, the documentation of educational and research innovations, and the setting up of freedom of thought and ideas. The university cannot be indifferent to the knowledge audit and the determination of the type of transferable knowledge and planning for its management and transfer.

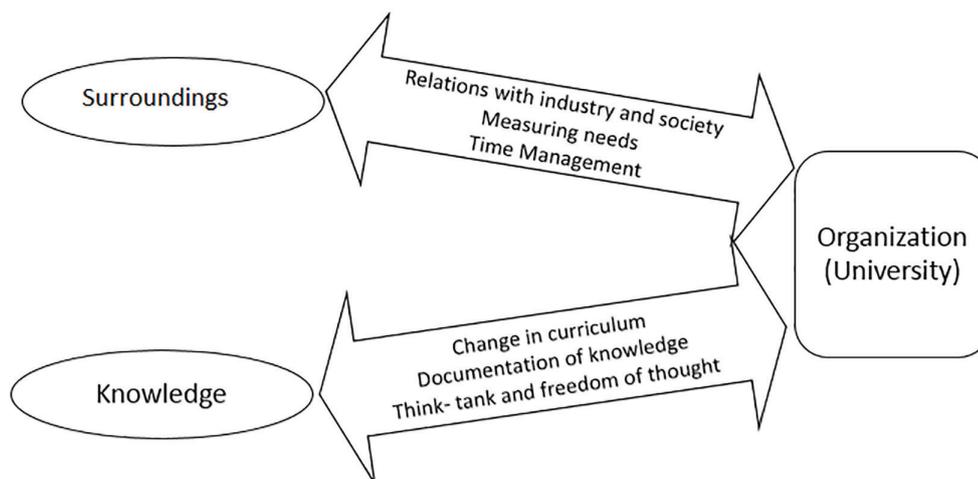


Figure 2. Relationship factors that arise due to the relationships of university with the knowledge and comprehensive

Change in Curriculum

A change in curriculum is likely to lead to a class being run by several professors or a course run by several professors with diverse knowledge.

“After the changes in our student curriculum, we had to create classes that were run by two or more professors” (code 2). The variety of types of specialized knowledge between the professors at a college or faculty of a university has increased the share of knowledge. Homogeneous teams with different specializations often have a good interest in knowledge sharing(13) . But, on the other hand, the common language and the knowledge alignment between the professors of a college also increase the knowledge sharing in the college. Solving this paradox is the type of need of knowledge seekers. The need for knowledge in heterogeneous groups and the need for synergy in homogeneous teams both give rise to and increase the incentive to initiate a process of knowledge exchange

Documentation of Educational and Research Innovations

Depending on the type of transferable knowledge, transmission mechanisms are required. As the business model is important in knowledge transfer (51), explicit and implicit knowledge is also the case. Face-to-face transmission mechanisms such as conferences and meetings are implicit in transferring knowledge, while the publication of an article can help to reveal knowledge and transfer it to others. Explicit knowledge such as books, articles, ect., are easier to learn from the experiences and skills of professors in the college’s knowledge. A good documentation program can facilitate this flow.

3. Knowledge Knowledge Dynamics

The components that make up the knowledge are knowledge dynamics, the type of transferable knowledge, the diversity of knowledge in colleges and universities, and the

university knowledge resources. Knowledge is not stagnant, static or object-specific, but, it is a social knowledge, transformational. What is not considered today as a knowledge. It was previously a modern and important knowledge. Perhaps one of the reasons for transferring knowledge and sharing is that knowledge should be used before it becomes obsolete.

“The speed of updating the articles is in such a way that the expiration date of an article is an average of 15 minutes” (Code 2).

“Short half-life of knowledge” (Code 16).

Knowledge Diversification

“The diversity of groups at the Faculty of Advanced Medical Technology compared to other faculties and the technological nature of our work has led to more group interactions and experience sharing sessions”(Code 6).

Although there is less evidence that the diversity of work team members has succeeded, there are many indications that the diversity of knowledge among members of the working groups leads to better performance (52). Changing work practices from individual to group requires that people work together to share information, differentiate themselves and ignore their interests in order to achieve group interests (52).

University Knowledge Resources

In addition to the concepts discussed, the college’s knowledge assets, records and resources, and its professors also provides a solid foundation for an effective knowledge transfer. When there are many knowledge assets in the college in the form of research history or research equipment, and even management experience in this field and over the years, there is in itself a solid institution in the college that the flow of exchange and subscription will be guaranteed in the present and on the future.

Knowledge Searching Beyond the Organization’s Boundaries

In the relationship between knowledge and environments, components such as scientific

goals, the transfer of knowledge beyond the boundaries of the faculty, and attention to the time and the short life of knowledge is significant (Figure 3). Targeting knowledge based on knowledge changes in the outside environment of the faculty is possible. In addition to the social, economic, and cultural achievements that are outlined for the university in the country’s comprehensive science plan, it seems that colleges need to come up with fully-fledged and scientifically-minded goals; and in this case, the short life of knowledge should be well seen. This will not be possible except by transferring knowledge beyond the boundaries of the faculty and even the university.

4. Surroundings

University professors are actors who move between organizations and affect the interactions between organizations outside the university environment and affect it. As an organization, the university is also strongly influenced by changes in its external environment. They also operate within the limits of time and place. So the surroundings are important, such as external changes, time and space.

Time

“There is no special opportunity to transfer knowledge among professors, many are busy” (code 6). “Knowledge transfer in the face of two big obstacles is time and mood” (code 9).

“Triple educational, research and executive tasks do not leave an opportunity for the purposeful engagement of professors” (Code 13).

Knowledge sharing is a time consuming process. Organizations need to ensure that

their knowledge workers have enough time for knowledge participation, and that managers in practice should devote time to transfer knowledge between individuals(48) . Many professors, given their many educational and research tasks, are less likely to exchange ideas. An executive plan for managing time and managing interactive spaces by senior executives is the only way to create face-to-face interactions between professors.

The Legitimacy of Knowledge Transfer

Moreover, as long as the legitimacy of this transfer is not verified by others in terms of justice, the knowledge flow in the organization will not work well.

Knowledge Intermediaries

When discussing the transfer of knowledge from university to society and industry, the role of offices and committees of knowledge transfer is discussed, which examines the intermediary of transfer strategies and mechanisms, and make a relationship between industry as the receiver and the university as the sender of knowledge. In this paper, researchers have also examined the need for such intermediaries to facilitate the transfer of internal knowledge between professors in terms of management and structure. The need for knowledge mediums (with a frequency of 15) was emphasized by most people.

Intermediaries can help by establishing a well-informed knowledge flow through institutional monitoring through the continuous monitoring of the channels of communication between the professors through the alignment of knowledge transfer strategies with the organization’s

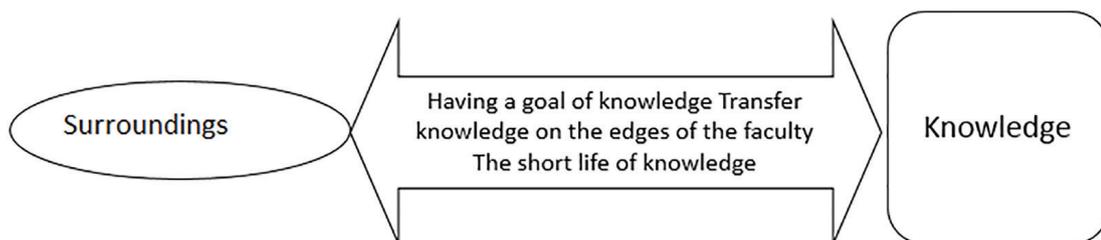


Figure 3. Relationship factors that arise due to the relationships of knowledge with the comprehensive

strategies; the direction of the college's academic and research activities.

"We need to be careful not to get under the shade of stressing the structure of processes and performance that leads to system upgrades ... It's good to emphasize the office instead of emphasizing people who are willing to upgrade that, to do this, you need action people" (Code 12).

"In general, if we look at how each faculty is defined in a prominent field of work, and be in the direction of the academic line of the university, and ultimately, all will be linked to the treatment department; in fact, research will be directed towards the goals" (14).

"At the college, we had a professor who had a history of working at Harvard; about ten years ago, we suggested that we collect all our professors; prioritize research according to the needs of the community and focus our focus

on training on this priority. ... Therefore, we led our studies and fields of research into this direction, and this was a worthwhile task" (Code 4).

They can audit knowledge, manage time and space, and identify the best transfer mechanisms in each situation. Therefore, perhaps the most basic factor can be considered in the organization's policies for establishing knowledge flows in colleges(53) Because, strategies determine the scientific course of the colleges and the overall knowledge of the university. Therefore, in this research, these eleven factors are identified as the most important factors that need to be managed by managers (figure 4).

Conclusion

People are the most important factor in

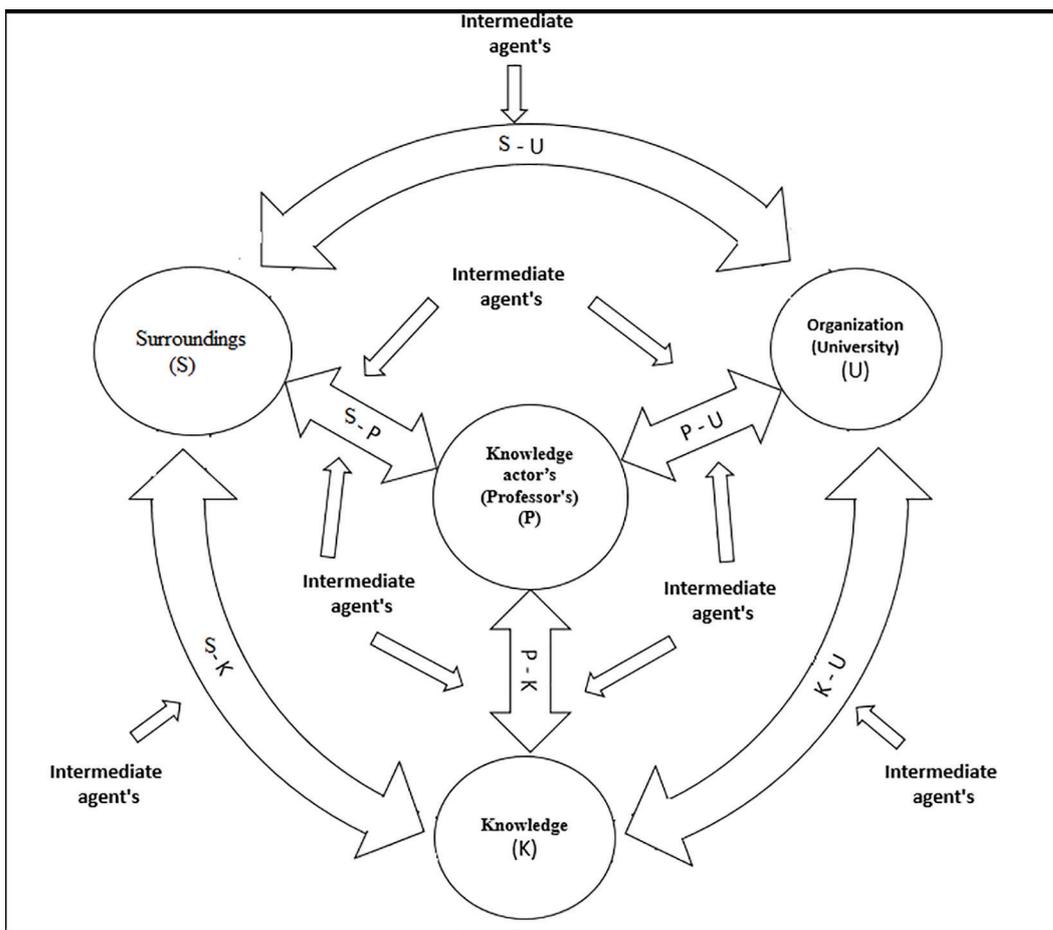


Figure 4. Non-communication factors and communication factors in Knowledge Sharing and Knowledge Transfer among Academics

transferring knowledge. It is necessary to make efforts to prepare professors for good team or team interaction; as well as with an incentive system that will be rewarded in addition to people's efforts in group activities, so that the rules for the promotion of professors not only damage the training process or theft, but encourage the transfer and sharing of knowledge between professors. However, the incentive schemes of an organization need not neglect the rewards of the organization while ensuring the remuneration of the organization. Designing and implementing a good assistant system facilitates interactions between professors to prevent the wasting of teachers' time and ability and the transfer of tacit knowledge between them. The use of educational scholarship by educational groups will improve and improve the educational status of the colleges.

The production of knowledge is not for knowledge; for each faculty and at the university, we need the goals and goals of a certain and achievable knowledge. Knowledge management policies and knowledge transfer strategies at different colleges of a university can, in the same way, complement each other. Since the type and nature of knowledge of different colleges vary, there is a need for different strategies for transferring knowledge in different colleges. However, it is necessary to consider in the KM policy-making process that the academic discipline of the colleges is complementary to each other's academic goals. Therefore, knowledge gains must be determined based on socioeconomic and cultural needs of the society and based on the scientific map of the country, so that the colleges can well design the achievable and fully scientific goals in this regard. If the running programs are well suited to a comprehensive KM development program, more can be guaranteed from the operation of the programs.

Knowledge intermediaries can help by establishing a well-informed knowledge flow through the continuous monitoring of

communication channels between faculty members through aligning knowledge transfer strategies with organizational strategies, orienting the college's academic and research activities, and Institutionalize. They can audit knowledge, manage time and space, and identify the best transfer mechanisms in each situation. Such intermediaries are required by the legal backing of the organization and their activities are defined in the organization's work processes, but may not be defined in the structure of the organization. However, it should be noted that the transfer of internal knowledge within the organization, such as the transfer of knowledge, does not occur on its own.

Conflict of Interest

The author declares no conflict of interest.

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