Effective Knowledge Transfer: Application of the Media Richness Theory

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Article Info	ABSTRACT
	Objective: Nowadays, information and knowledge are easily transmitted through communication and media types. Knowledge transfer must be in a manner that best meets the organization's business needs. The knowledge transfer quality depends on communication, and communication media have different levels of capability in transmitting knowledge; Media selection is based on various factors such as specific media features and the message content nature. **Materials and Methods**: The current research has been done by the library method. The necessary data were gathered through the study of printed and electronic information resources available in libraries, on the Internet, and in national and international databases. **Results**: One of the success factors in transferring tacit knowledge depends on the selection of the appropriate knowledge transfer mechanism and communication media. Tacit knowledge (the most important type of knowledge) can be captured, stored, or transmitted using a specific type of technology based on the media enrichment theory. The main assumption of media richness theory is that person's performance in a communication situation is the result of proper conformity between the communication media features and intended task attributes. **Conclusion**: According to the media richness theory (MRT), each channel has its advantages and disadvantages, and as a result, each can be more ideal than the others for different scenarios. In the knowledge-sharing process after determining the implicit levels of knowledge (high, medium, low) by experts, based on media richness theory, the most appropriate media for transferring this type of knowledge is selected to ensure effectiveness.

Introduction

Media is a device that transmits the sender's message (meaning and meaning) to the recipient. In other words, the media is the transmitting device from the sender to the receiver (recipient). Each media transmits (conveys) different information and events. Today, large amounts of information and knowledge are easily accessible to people through a variety of media. Communication media have different characteristics. Some media are fast and others are slow. Some media have a superficial and fleeting impact, while others leave a profound and long-term impact. Some media have more emotional effects on recipients (audiences). Therefore, the selected media can have a significant impact on the attitudes and behaviors of individuals (Mohsenianrad, 2003). In other words, communication media have different levels of capability that indicate their potential information capacity (Miles, 2012).

In general, media selection for conveying the message (information and knowledge) should be based on the specific features and capabilities of the media on the one hand and the nature of the message content on the other hand. In other words, Media Selection is based on how a specific type of media can facilitate the understanding of specific information for the audience (Mohsenianrad, 2003). In this regard, over the past years, media enrichment theory has expanded extensively and compared & supplemented with other media selection approaches. However, recent studies and theories have also increased the ability to describe the capabilities of rich media communication.

In the present article, after a brief review of knowledge and how it is transmitted and shared in organizations, the theory of media richness, considering that the basis of many theories and models is related to media selection and message transmission, is introduced and then applied to the above theory. It deals with knowledge transfer and knowledge management (KM).

Materials and Methods

The current research has been done by the library method. The necessary data were gathered through the study of printed and electronic information resources available in libraries, on the Internet, and in national and international databases. To retrieve related resources, the keywords of tacit knowledge transfer, tacit knowledge transfer tool and method, and communication process were used. In the following, after reviewing the definition and importance of knowledge transmission and media richness theory, the application of the above theory in tacit knowledge transmission is explained.

Knowledge Transmission

Today, organizations are becoming more and more unstable and complex in terms of rapid scientific, technological, and work environment developments. In such circumstances, successful organizations are those (the ones) that while gaining knowledge and awareness of changes and environmental factors, improve and enhance the organization's performance to maintain and improve their survival. In other words, the fundamental economic resource for organizations is not capital, natural resources, or labor, but it is and will continue to be a source of knowledge. In recent years, managers and academics have recognized knowledge as a key source of competitive advantage.

With appropriate knowledge management organizations have successfully created competitive advantage. Knowledge management can be considered an integrated approach to achieving organizational goals with a particular focus on knowledge, which is currently regarded as the new production factor. Knowledge management supports and coordinates knowledge creation, transfer, and use of individual knowledge in value-creation processes. This effort is only achievable in an organizational culture that promotes knowledge management and actively supports processes of notification and documentation (For example, through the systematic application of innovation and quality management tools and methods) (Summer et al., 2019).

Knowledge can be categorized in different ways. Perhaps the broadest classification of knowledge that is agreed upon by researchers is the distinction between explicit knowledge and tacit knowledge. Explicit knowledge is in books, articles and documents, codes, project reports, contracts, graphs, minutes from a meeting, a chain of e-mail correspondences, and policy guides. In contrast, tacit knowledge (the most important type of knowledge) is developed over time by individuals through experience and cognition gained from working in an environment (AL-Qdah & Salim, 2013). In other words, explicit knowledge is consciously understood and can be expressed; Knowledge, which is the knower (erudite) aware and can talk. Tacit knowledge, on the other hand, is the knowledge that the owner himself does not know; this type of knowledge can only be revealed −if not at all− with great effort and using specific observation techniques or interviews. When an individual is aware of his tacit knowledge that faces a particular situation. Thus, tacit knowledge is personal and difficult to define formally, and is rooted in practice, method, commitment, values and feelings (Nonaka & Takeuchi, 1996).

Tacit knowledge transfer is much more difficult than explicit knowledge. Because explicit knowledge is based on theory and is formally transmitted stand on a systematic language. While tacit knowledge is Unmodifiable, Unteachable, and complex (Coppedge, 2010). Therefore, organizations need a holistic approach to managing tacit knowledge in their environment (Yang, 2009). In this regard, knowledge management is one of the most important duties of organizations seeking to exploit this valuable asset (Manourian, Asgari & Ashna, 2007). In other

words, knowledge management refers to the systematic and coherent process of coordinating the organization's extensive activities, including the acquisition, creation, storage, sharing, and application of knowledge by individuals and groups to achieve organizational goals (Rastogi, 2000).

When knowledge is created, it should be shared between members of the organization so that it can provide a basis for innovation and knowledge creation in the future. Knowledge sharing to create new knowledge is possible through the collaboration of individuals and the synergistic combination of experiences and backgrounds of organization members. Knowledge sharing or dissemination is performed between individuals, groups, and organizations that use communication networks (Alavi & Leinder, 2000). Researchers have equated knowledge sharing with knowledge flow and knowledge flow includes five main pillars. These five pillars are knowledge source value, resource willingness to share knowledge, media richness of the communication network, recipient's willingness to receive knowledge, and ability to compensate (Gupta & Govindarajan, 2000). Hence, the quality of knowledge transfer depends on communication; it is clear that many channels are available for communication. Each channel has various characteristics on how to facilitate and transfer knowledge. These attributes have to be considered to form the communication strategies of knowledge transfer, provide value added to customers and increase the depth of relationships (Dawson, 2012).

Two main strategies contribute to sharing experiences or tacit knowledge; the encoding strategy attempts to document portions of empirical knowledge which can be done explicitly. (They can be written), Therefore, separates it from the individual employee and put it publicly available to others. Other employees in similar situations can refer to and apply these documented learning experiences (like learned lessons) whenever necessary without direct contact with an expert. On the other hand, the personalization strategy focuses on experience transfer through direct communication. The purpose here is to encourage tacit knowledge through communication processes and mutual observation. To ensure that contacts are systematically occurring and not just given the chance, an organization should know what is its staff specialized in. E-mail, project documents, drafts, reports, interviews, etc. contain a good sign of what can be included in electronic profiles. In either case, there is a need for a medium or communication tool to transfer knowledge (Summer et al., 2019).

Figure 1 demonstrates two types of knowledge transfer strategy in three levels: individual, team, and organizational. In the personalization strategy to transfer effective knowledge through human networks, knowledge applicants and knowledge providers must access appropriate communication methods (e.g. meetings, mentoring meetings). Face-to-face communication is the most valuable and time-consuming form of knowledge transfer, particularly for complex problems. (For example, clarifying research and development problems). Knowledge transfer

through communication tools should be also mentioned (such as telephone, and video conferencing,) that enables communication through geographical boundaries. The facilities provided by video conferencing tools are now very similar to those presented face-to-face. Previous researchers have identified other mechanisms used for the transmission and use of tacit knowledge in the organization (Summer et al., 2019). Some of them are expertise community, observation, training, consultation, metaphor, similarities, storytelling, specialized interviews, training by performance, conceptual mapping, time map, and brainstorming.
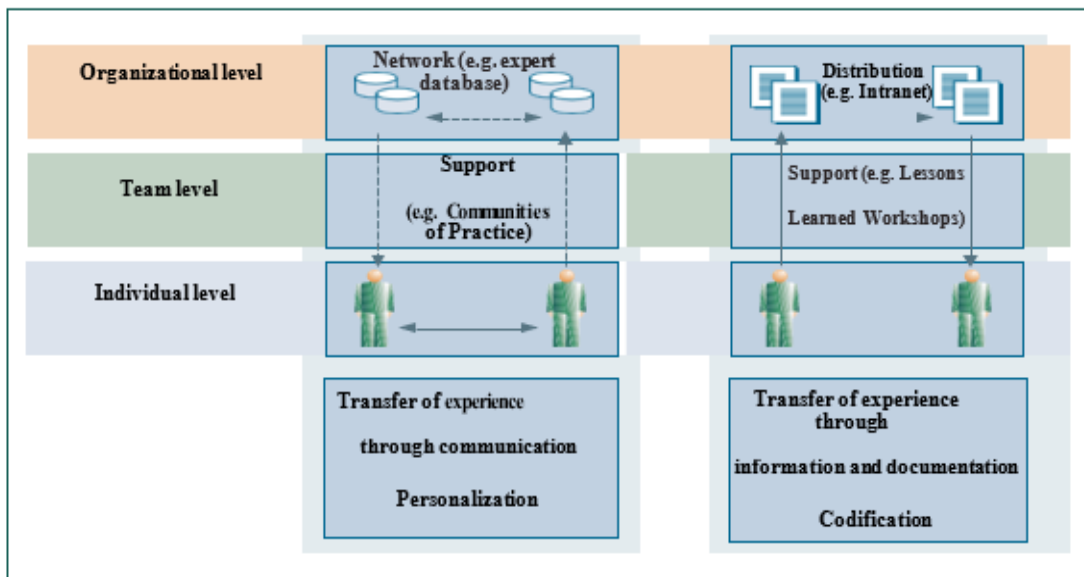

Figure 1. Transfer of experience through personalization or codification (Summer et al., 2019).

The above examples demonstrate the main requirements for effective knowledge transfer in a business environment. It should be noted that a type of knowledge transfer should be selected to best meet the business needs of the organization. A human network is an appropriate way to transfer knowledge for complex problems. For simple problems, knowledge transfer can be effectively performed using information and communication tools. The knowledge seeker existing context also plays a key role in choosing the appropriate form of knowledge transfer. Face-to-face communication has the added advantage for knowledge applicants, allowing them to increase their field knowledge. Whereas, to transfer knowledge based on information and documents, applicants must already have relevant background knowledge (although this knowledge can be obtained separately). In addition to choosing the appropriate form of knowledge transfer, adequate infrastructure and environment are needed. (Information and communication infrastructure, time ...).

Figure 2 illustrates the knowledge transfer between applicants and knowledge providers with the main requirements.
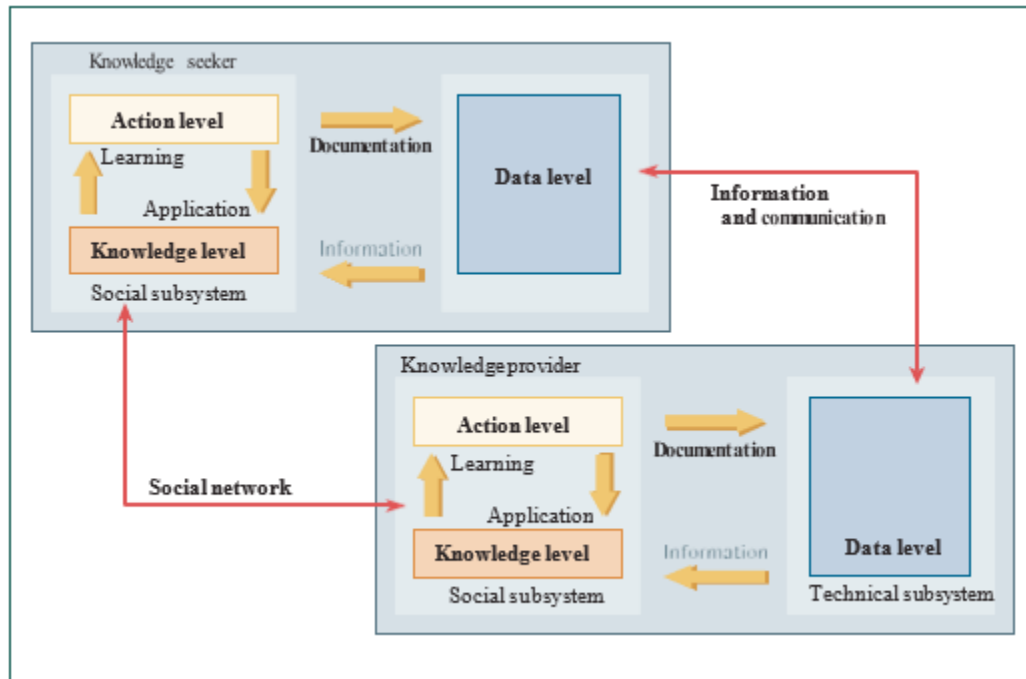
Figure 2. Knowledge transfer between knowledge seekers and knowledge providers (Summer et al., 2019).

Generally, knowledge can be captured, stored, or transferred using a certain type of technology based on media richness theory. Media richness theory is usually used for media selection in organizations. In this case, this theory explains the reasons for the effectiveness of any medium for certain tasks. According to media richness theory, each of these channels has its advantages and disadvantages, and therefore each one can be more ideal than the rest for different scenarios (AL-Qdah & Salim, 2013).

Media richness theory, sometimes called information richness theory, was presented by Daft, Lengel, and Trevino in the 1980s. Originally, media richness theory based on contingency theory and information processing theory is adapted from Galbraith (1977) and its main components have been considered by Daft and Lengel. These researchers emphasize that communication media is based on the concept of resolving ambiguity and optimal interpretation and facilitative understanding in their discourse. According to media richness theory, ambiguity is a key concept to determining the best communication media used for each task type. Therefore, the most opaque messages need to use more powerful communication media to be effective. Communication messages also include a level of uncertainty (mistrust). Uncertainty usually refers to the lack of information in the message (Shannon and Weaver, 1949). Therefore, organizations should develop structures (e.g., formal information systems, and task forces) to facilitate the flow of information and knowledge. The selection of an appropriate communication medium depends on the level of uncertainty and ambiguity in the message. Other functional

message features for media selection proposed by some resources include analytics, complexity, procedures, emotional content, and urgency. The media richness theory, as an independent theory, considers fourfold assumptions:

- o Access to instantaneous feedback;
- o Media capacity to transmit multiple indicators such as body language, tone, and other changes;
- o The use of a more common language or communication tool;
- o Personal focus on the media (Basirian Jahromi, 2011).

The main presumption of media richness theory is that the person's performance in a communication situation is the result of appropriate conformity between the features of communication media and task attributes.

In other words, people using a proper communication channel for their tasks are more effective than people who do not use a proper communication channel. Straub and Karahana (1998) categorized the justifications for media selection into four groups:

- Proportion between performance and media: This justification is based on the media richness theory, which assumes that the selected media characteristics must conform to the current performance information requirements.

- Performance: in other words, each organization should provide appropriate communication infrastructure concerning their performance, to form relationships for organizational performance.

- Media: this justification focuses on the features of the media itself. The used media should be flexible and accessible to the possible extent. Electronic media have multiple capabilities that justify the investment in this area.

- Social environment: In the social environment, components such as 1) the presence of a significant set of users and 2) timely accessibility of the recipient are considered.

Media richness theory describes a communication model through which the communication media are characterized based on their ability to transfer and reproduce the transmitted information. This theory is an important concept for learning as part of our effort to improve information processing knowledge, media skills, and e-mail processing skills (Daft, Lengel & Trevino, 1987). In other words, this theory measures situational requirements in relation to the number and type of messages, target, participants, and limitations that a potential user can use a particular medium (Koo, Wati & Jung, 2011).

Media richness theory considers the ability of a communication channel to move information or convey the meaning of a message (Mohsenianrad, 2003). According to the media richness

theory, the amount of information that a medium is transmitted depends on the ability and capacity of the media. Media richness can also refer to media capacity for the transmission of multiple signaling and quick feedback recipients. Daft and LENGEL believe that multiple tasks require rich information media and require a great deal of personal interaction to motivate individuals. According to this theory, the media that can transmit multiple symbols such as phonetic, and dynamic, receive fast feedback. The use of voice and image and the use of personal interactions and relationships are the most powerful media for transferring messages (Daft, Lengel & Trevino, 1987). Some media for personal communication are usually: face-to-face, e-mail, phone, voice mail, fax, letters, and the like. According to media richness theory, media can be ranked based on their richness. On this basis, face-to-face is, the richest medium and e-mail is the weakest (Hassanzadeh, 2007).

Over the past years, media richness theory extensively expanded and compared, and complemented by other media selection perspectives. For example, LAN and Sai (2010) examined four user perspectives on rich media components; these four perceptions are timeliness content, content richness, content accuracy, and content consistency. Timeliness means that media is sensitive to time and allows immediate feedback. Content richness means that the media consists of different types (such as text, graphics, and video). Content accuracy means that the message can be expressed explicitly or easily understood. Content consistency means that the message can be adapted to other formats or changes.

Another new theory has developed based on the main framework of Daft and Lengel. In this context, Cook (2004) argues that non-verbal and human communication systems such as facial expressions, gestures, and body language have evolved for millions of years and therefore should be important for natural communication among people. Media natural theory assumes that since face-to-face communication is the most natural way, we need to approach our communication methods face-to-face as much as possible. While media richness theory puts the media on a scale which have low and high richness and puts face-to-face communication at the top of the scale. The media naturalness theory considers face-to-face communication as a median point in the scale and states that a communication medium (richer or more ordinary) is placed at a distance from face-to-face communication according to the amount of cognitive processing to understand messages. This approach concludes that most communication media are less like face-to-face communication, as a result, there are more cognitive efforts, ambiguity, and physiological arousal when using media.

In the past, one criticism of media information richness theory was the neglect of social aspects of communication (Hassanzadeh, 2007). To overcome this deficiency, researchers sought to combine and compare media richness theory with social penetration theory. The social penetration theory takes into account media selection according to the influence of social forces

such as norms of work groups and supervisor behaviors and co-workers. One of the theories associated with media selection is the role of symbolic terms. In this view, it is believed that media selection depends on the symbolic social concepts that are transmitted by selecting a particular medium (Trevino et al, 1987). Thus, this theory has been criticized only for concentrating on individual choices (such as managerial choices). There is no claim to situational and social factors that can affect the adoption and use of communication media. Extensive or limited use of a medium can facilitate the adoption and use of communication technologies.

Researchers have also investigated how attitudes and behaviors related to the use of media are socially constructed. For example, Coe & Whitty (2011) investigated how employee's social relations affect media use in modern work environments and work performance. They selected five media (telephone, videoconferencing, e-mail, instant messaging, and weblog) in their study. Using a hierarchical regression approach, these researchers found that there is a relationship between task characteristics using media, while social factors (social penetration and social dependence) moderate the degree of communication. Furthermore, the use of social technologies leads to positive work practices. Finally, the use of social communication technologies is determined by the interaction between tasks and social relations. In addition, the social communication technologies integration allows the development of informal communication, which may be important as an inseparable part of the organization (Coe & Whitty, 2013). Therefore, social pressures such as protection, socialization, social control, and social norms can lead to public acceptance and the use of communication strategies. However, even research on social impacts is not constant (Miles, 2012). Webster and Trevino conducted empirical policy research. Respondents presented multiple scenarios that differed from the researchers' expected factors. They found that ambiguity, the distance between the parties and the number of messengers, and also the effect of social factors and symbolic sentences play a role in the justification of media selection.

Critics expressed that the theory assumes, people are passive repositories of any information sent to them. Following Habermas (1979, 1984, 1987), researchers have explored the view that smart individuals are active assessors of truth and seek the completeness, honesty, and content of the messages that are transmitted to them. So, there are social and cultural influences on the selection and use of media. On the other hand, Robert and Dennis (2005) found a paradox that is contrary to the original idea of theory. They argued that the use of rich communication media (high social presence) can increase user motivation but also can impair the user's ability to process information received. Poor communication media (low social presence) can reduce user motivation but can facilitate the users' ability to process received information in communication (Miles, 2012). Therefore, according to media richness theory, media selection for transmitting messages should be done based on specific characteristics and content. However, with regard to

conducted investigations done in recent years and some related theories, some factors, including situational and social, new communication technologies, and … are influential in media selection.

Badensteiner (1970) developed a hierarchy of communication media that ranked four different media categories. DAFT and Lengel (1984) adapted this hierarchy and created a media richness range for four media channels based on four media characteristics: (1) Feedback, (2) Channel, (3) Source, and (4) Language. In this chain, they ranked the media from the highest to the lowest in terms of richness: Face-to-face (with the highest social presence), phone, personal writing, official writing, and formal score (minimum social presence). A new formulation of the chain classified the media from the highest capability to lowest in terms of physical presence (face-to-face), interactive media (phone, electronic media), and static media (notes, letters, personal computer reports), and static interpersonal media (banners, bulletins, public computer reports). Although in recent years, communication media have expanded and communication patterns in the new form of social networks have changed the way individuals communicate with each other.

Rich (information) media can retain and transmit multiple and often simultaneous cues, visual and face-to-face responses, fast feedback, direct and targeted focus, and high language clarity. Examples of rich media include face-to-face and video conferencing. In contrast, weak media, often asynchronous, contain only very little (or no) visual response and less interaction. Often, the message and content are received by the recipients in the form of multiple interpretations or vague interpretations. Examples of poor media include letters, reports, and e-mails. For example, e-mail does not convey symptoms and facial expressions, words, body language, and rapid feedback; that is seen in rich communication media such as face-to-face and voice conversations. In recent years with the advent of multimedia, since the removal of spatial distance between the audience and the medium and the use of voice, image, and document in a single medium, communication media have found more capability and richness (Masoudi & Bibakabadi, 2017).

Using enriched media leads to more effective communication processes. Therefore, some media are more effective than others ones. Studies have shown. Managers who are more skilled in selecting appropriate communication media for specific tasks are more effective than managers who are less skilled in this field (Miles, 2012).

Application of Media Richness Theory in Effective Knowledge Transfer

In recent years, managers and academics have recognized knowledge as a key source of competitive advantage. Several KM initiatives have been launched in recent years to create a targeted trend for collection, storage, sharing, and leveraging what employees know. The main focus of knowledge management is to share and transfer tacit knowledge among employees; generally, there are two ways for sharing and using tacit knowledge. One of them is done through interaction among specialist staff. Another approach is defined as creating a common space for

emerging relationships. This perimeter can be physical (administrative, diffused business space), virtual (e-mail, phone, videoconferencing, web 2.0), mental (shared experience, ideas, ideals), or any combination of them (Nonaka & Konno, 1998). Tacit knowledge can be captured, stored, or transferred using a specific type of technology based on media richness theory. Media richness theory is commonly used to select communication media in organizations. In this regard, the theory explains the reasons for the efficiency of any media type to perform certain tasks. a medium communication channel that enables individuals to interact and share knowledge is: Face-to-face interaction, video conferencing, phone, Web 2.0 technology, e-mail, etc. according to media richness theory, each of these channels has its advantages and disadvantages, as a result, each one can be more ideal than the rest for different scenarios (AL-Qdah & Salim, 2013).

People have both explicit and tacit knowledge. Explicit knowledge can be communicated, developed, or shared easily. Explicit knowledge can be encoded and communicated effectively through regular media. While tacit knowledge is entirely inaccessible to others because they are deeply embedded in the individual's mind. There are two levels of tacit knowledge: 1. coherent and integrated implicit skills. 2. The implicit skills that can be achievable. Coherent tacit skills can be easily expressed if only asked this question: "How can you do that?" In this position, some of the implicit skills are explicitly earned and become tacit knowledge over time. Given this fact, people never realize what they are doing and they do not pass on knowledge until someone asks them. Another type of tacit knowledge can be available but cannot be expressed using natural words, but can be explained differently by using metaphors and storytelling. In the following figure, the types of implicit knowledge have been shown from the lowest degree to the highest level.
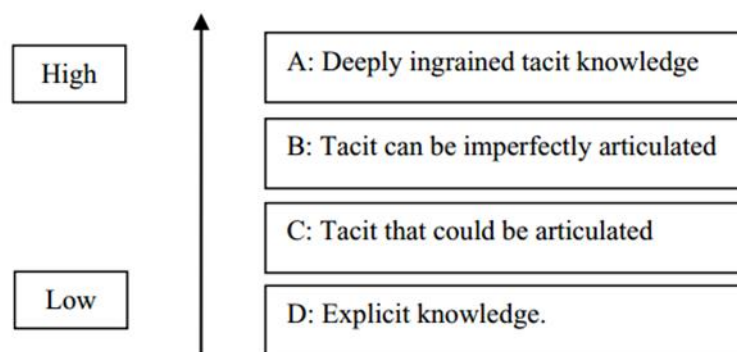

Figure 3. Degree of tacitness (AL-Qdah & Salim, 2013).

In the knowledge-sharing process, tacit knowledge will be effectively transferred from expert to beginner by classifying tacit knowledge into tacit levels or degrees (high, medium, low). After experts have identified tacit levels on their knowledge base, the most appropriate media for transferring this type of knowledge is selected to ensure the effectiveness of knowledge transfer.

An example of tacit high-level knowledge is the study of employee behavior. This type of knowledge transfer process requires an observation mechanism and the appropriate media for this kind is video conferencing. On the other hand, if an expert wants to transfer tacit knowledge with an implicit lower degree, the most appropriate medium is voice mail or e-mail. Therefore, in this method knowledge can be clearly perceived and the level of ambiguity is reduced to move from the transmission phase to the application phase.

In this context, SALIM and AL-QDAH (2013) present a conceptual framework that reflects the classification of tacit knowledge into different levels and forms of communication media based on the degrees of tacit knowledge.
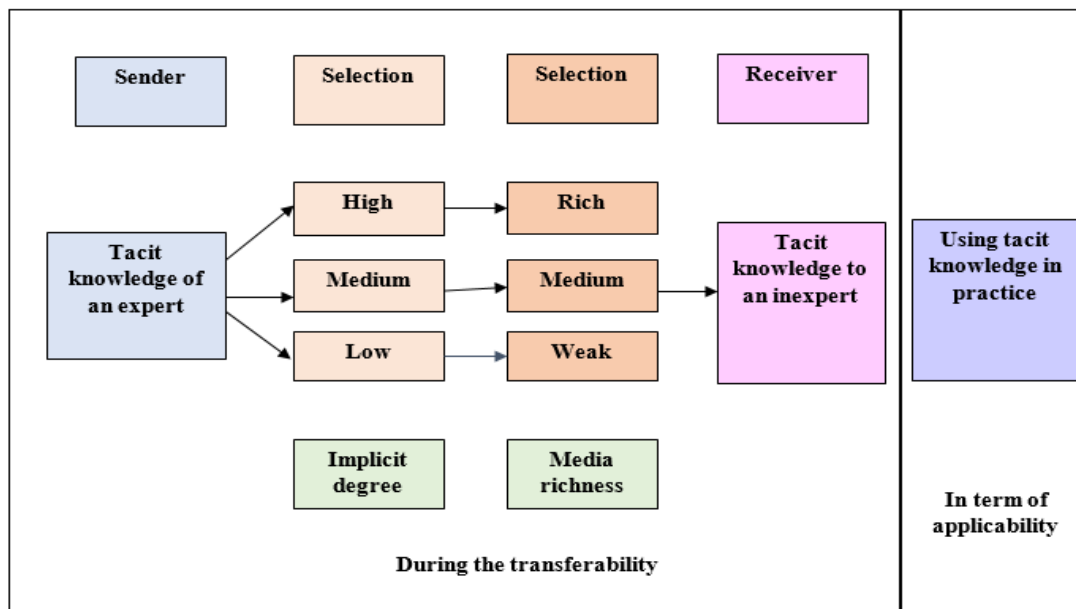

Figure 4. A Conceptual Framework for Managing Tacit Knowledge (AL-Qdah & Salim, 2013)

As Figure 4 shows, success in transferring tacit knowledge depends on the appropriate choice of knowledge transmit mechanism and the type of communication media. In other words, based on the media richness theory, international management researchers believe that the transfer of uncoded tacit knowledge using rich media is more effective and efficient than conventional communication media (Peltokorpi, 2015). Pedersen et al. (2003) argue that richer communication media are more effective than written media for transmitting tacit knowledge. Tsai and Ghoshal (1998) suggested that high bandwidth and concurrency in face-to-face communication reduce the loss of tacit knowledge transfer. Bandwidth refers to the ability to transmit non-verbal and visual tokens in communication and synchronization with the ability to provide and receive immediate feedback. On the other hand, rich communication media may reverse transmission losses in

knowledge transfer; in other words, transmission losses may lead to the enrichment of mainstream knowledge (Mudambi, 2002).

Despite the advantage of using ICT, face-to-face communication remains the "gold standard" for implicit knowledge transfer (Noorderhaven & Harzing, 2009). While the joint language in multinational companies enhances employees ' ability to transfer knowledge to headquarters, this issue has received relatively less attention in international research. For instance, a qualitative study of German subsidiaries in Japan indicates that managers prefer e-mail more than phone conversations because they had written e-mail better and faster than spoken language skills. Another qualitative study of multi-cultural and multi-lingual teams in Denmark also shows that team members with low skills in a common language prefer to use e-mail, although face-to-face communication was more effective for knowledge sharing. Thus, the richness of communication media has a mediating effect between the efficiency of shared language and implicit knowledge transfer (Peltokorpi, 2015).

Generally, the use of rich media has increased the effectiveness of communication processes and knowledge transfer. Figure 5 mentioned a variety of communication media and their effectiveness.
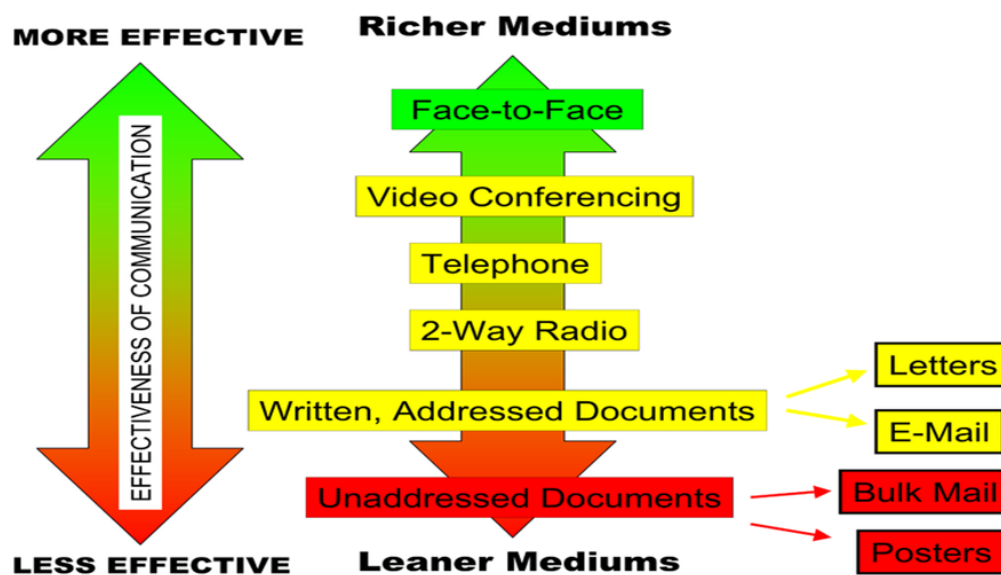

Figure 5. Media selection and communication effectiveness (Miles, 2012).

Conclusion

Recently, managers and academics have recognized knowledge as a key source of competitive advantage. Knowledge management is essential for organizations to compete in the business world. Dealing with the creation, transmission, and use of knowledge increasingly relates to the

survival and success of the company in critical situations. Accordingly, knowledge management systems are widely accepted for KM. These systems require the use of ICT to conduct the knowledge management process. ICT is one of the most important factors of communication between different parts of the organization and knowledge transfer mechanism. One relevant view of information technology in knowledge sharing is communication theory. Orlikowski and Yates (1994), pointing to the knowledge treasures, analyzed the way of compiling communication constructs by artificial intelligence researchers. Accordingly, knowledge treasures, which are formed by functional groups such as e-mail and …, assist the assembly in doing their work.

Long ago some researchers in the electronic communications field focused on media selection issues for information transfer (Hassanzadeh, 2007). Daft and Langel (1989) identified the main ideas of information enrichment. In their previous work. They believe that vague and multiple tasks require rich information media, and it requires a lot of personal interaction to persuade individuals. This theory does not directly offer which media are more capable, but it provides an answer to why a medium is better (according to the communicative situation). Some common communication methods are face-to-face, e-mail, phone, voice mail, fax, letters, and so on. According to information enrichment theory, the media can be ranked based on its richness; face-to-face contact is the richest, and e-mail is the weakest.

Over the past years, media information richness theory, extensively expanded. One of the practical and important fields of this theory is knowledge management and knowledge transfer. In this regard, it can be said that in the knowledge-sharing process, after determining levels or degrees of tacit knowledge (high, medium, low) based on media enrichment theory, the most appropriate medium for transferring this type of knowledge is selected to ensure the effectiveness of knowledge transmission effectiveness. An example of a high-degree tacit knowledge is the study of employee behavior. This type of knowledge transfer requires an appropriate observation mechanism and the proper media for this type is video conferencing. Contrarily, if the expert wants to transfer tacit knowledge with an implicit lower degree, the most suitable medium is voice mail or e-mail. Thus, success in transferring tacit knowledge depends on the appropriate selection of knowledge transfer mechanism and communication media type.

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Data Availability Statement

Not applicable.

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Ethical considerations

The authors avoided data fabrication and falsification.

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The authors declare that they have no competing financial interests or known personal relationships that would influence the report presented in this article.

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