International Journal of Education and Practice
2020 Vol. 8, No. 4, pp. 652-663.
ISSN(e): 2310-3868
ISSN(p): 2311-6897
DOI: 10.18488/journal.61.2020.84.652.663

THE INFLUENCE OF KNOWLEDGE TRANSFER THROUGH INFORMATION TECHNOLOGY IMPLEMENTATION ON HEADMASTERS' PERFORMANCE IN INDONESIAN SENIOR HIGH SCHOOL

Alhadi Yan Putra
Universitas PGRI Palembang, Indonesia.
Email: alhadian.putra@univpgri-palembang.ac.id

Article History
Received: 9 July 2020
Revised: 14 August 2020
Accepted: 11 September 2020
Published: 25 September 2020

Keywords
Combination
Externalization
Headmaster's Performance
Industrial Revolution 4.0
Information technology
Internalization
Knowledge transfer
Socialization.

ABSTRACT

This study aimed at analyzing the influence of the knowledge transfer through the implementation of information technology comprising variables like socialization, externalization, combination, and internalization (SECI) and reflected in the performance of the headmasters at state high schools and state vocational high schools in South Sumatera, Indonesia. The population in this study was 255 headmasters and 167 respondents were selected using nonprobability sampling and purposive sampling techniques. The instrument in measuring the variables in this study was a questionnaire distributed to respondents. The questionnaire's validity and reliability was tested on 30 headmasters of state junior secondary schools in Palembang city who were pilot tested out of the sample to be researched later by means of calculating if r-count > r-table, to determine whether the questionnaire items were valid. The testing of data normality and hypothesis test statistics were done with Structural Equation Modelling (SEM). The results showed that SECI have a positive and significant effect on the performance of the headmaster through the implementation of information technology. Individually, each variable of SECI was examined: the socialization and internalization variables showed a positive and significant effect while externalization and combination did not show any positive and significant effect. This study also presents the headmasters' expectations about socialization, externalization, combination, and internalization of their future performance for implementation of information technology in the era of Industrial Revolution 4.0 in the Indonesia context.

Contribution/Originality: This study aimed is one of the pioneering studies that analyze the influence of the knowledge transfer through the implementation of information technology variables like socialization, externalization, combination, and internalization (SECI). The success of these variables is a great determinant of development in the era of Industrial Revolution 4.0 in the Indonesia context.

1. INTRODUCTION

The most important factor in this current globalization era is the competence of human resources (Amin, Rashid, & Teh, 2019; Apriana, Kristiawan, & Wardiah, 2019; Ghani & Muhammad, 2019; Kristiawan, Nizarani, & Syamsidar, 2019; Tobari, Kristiawan, & Asvio, 2018). According to Greene and Petty (1976) education is a human effort to prepare oneself for a meaningful life. The constitution of law (20:2003) explains that education is a conscious and planned effort to realize the learning atmosphere and the learning process so that students actively develop their potential to develop religious and spiritual strength, self-control, personality, intelligence, noble

character and skills needed to build the society, nation and state (Fitria, Kristiawan, & Rasyid, 2019; Irmayani, Wardiah, & Kristiawan, 2018).

In this era of information, it is important to realize that the flow of knowledge in an organization is very fast (Abdel-Maksoud, 2018; Salcedo & Del Carmen, 2017). Nonaka (1994) developed this idea by stating that knowledge is about the specific meaning of content; it implies that knowledge users must understand and have experience with the context, condition, and effects where knowledge was generated and used by its means. Therefore, to make a knowledge repository useful, it must store the context in which the knowledge was generated. This is also confirmed by Davenport and Lawrence (1998) who view knowledge as a combination that continues to evolve from experience.

Bhatt (2000) explained that Knowledge Management has components that are interrelated with each other such as People, Technology, and Process. Nonaka and Takeuchi (1995) proposed a knowledge transfer model in cyclical management to describe the process of knowledge transfer in creative organizations. The model included four phases of knowledge conversion in an organization known as SECI which consists of socialization, externalization, combination, and internalization.

Nonaka. and Takeuchi (1995) also describes management tools that justify the belief that knowledge is an asset to increase organizational capacity to be able to work more effectively. Meta-analysis SECI model shows that the model has been applied in the context of industry and companies and other organizations with the aim of analyzing how the implementation of SECI in the organization can affect organizational productivity, performance, employee motivation. Masrek and Zainol (2015) linked the SECI dimensions of knowledge conversion with student academic performance where these dimensions were significantly correlated with students' academic achievement. This proves that SECI dimensions or socialization, externalization, combination and internalization are truly significant predictors.

This study aims to find out the influence of SECI on the performance of the headmasters through the implementation of information technology. Previous research studies have investigated the Knowledge Management of teachers in detail through the SECI model. However, its application to judge the performance of headmasters is still debated. This study seeks to close this research gap by proposing the specific concept of SECI model towards the implementation of information technology whose objects are the headmasters of state high schools and state vocational high schools in South Sumatra Province. This research is also carried out to contribute a to the domain area of knowledge management. This research is expected to provide insight for the headmasters in managing HR activities based on SECI dimensions and can prove a useful source for future research.

2. LITERATURE REVIEW

2.1. Knowledge Management

The perspective of an organization based on knowledge management emerges in studies like Nonaka and Takeuchi (1995); Spender (1996); Baridwan (2012); where the development of knowledge perspective as an extension of Knowledge-Based theory was first popularized by Penrose (1959) and subsequently developed by Barney (1991); Conner and Prahalad (1996) and Wernerfelt (1995) as stated in Alavi and Dorothy (2001).

The term Knowledge Management (KM) was first introduced in the beginning of the 1990s. Nevertheless, an initial study of knowledge management was carried out in the mid-1980s such as the study from Sveiby and Tom (1987) with the book of *Managing Knowhow: Add Value by Valuing Creativity*. Subsequently, knowledge management developed into a science widely adopted in various organizations.

There are various definition of knowledge management: Malhotra (1998) defines Knowledge Management as a science that caters to the critical issues of organizational adaptation, survival, and competence in face of increasingly discontinuous environmental change. Essentially, it embodies organizational processes that seek synergistic

combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings. In other words, KM is a combination of technology and the human mind.

2.2. Knowledge Transfer

Drucker (1995) acknowledged the need for "the application of knowledge to knowledge itself". The Knowledge Management based on the opinion of Swan, Scarborough, and Preston (1999) emphasized more on a knowledge-based view which leads to the production of tools to increase knowledge without learning from previous literature based on learning organizations that focus on people. Knowledge sharing across organizational boundaries is the key to the effective exploitation of knowledge.

According to Nonaka (1994); Nonaka and Takeuchi (1995) knowledge is "a dynamic human process where there is the justification of personal belief in the truth". Knowledge is also relative to certain situations. Nonaka, Toyama, and Konno (2001) said that "Without a context, just information, it's not knowledge". Nonaka (1991) believed that there are two types of knowledge contained in each organization, namely tacit and explicit knowledge. Tacit knowledge includes mentality, beliefs, and persuasion of workers. This tacit knowledge lies in each individual and is difficult to be expressed in words.

In most organizations, tacit knowledge is rarely shared or communicated therefore, it disappears when the individual who owns it leaves the organization. Tacit knowledge can also be seen as the knowledge contained in organizational culture, such as motivation and adaptability shown by workers. These workers work in a particular corporate culture comprising ideas, perception, ways of thinking, insight, expertise/skills, and so on. On the other hand, explicit knowledge is the knowledge which can be codified, shared, and communicated to others. Explicit knowledge can be explicitly expressed in words and numbers and distributed in the form of data, specifications, and manuals.

Most organizations have carried out a knowledge management process through capturing, storing, processing in a system or certain operating technology so that it is available and can be used by all members of the organization. Some of the examples of explicit knowledge are publications of manual, book, report, document, letter, and so on. Furthermore, Nonaka (1991) also observed that organizational learning stems from an interactive process as well as internalization and externalization of knowledge. Such an interaction takes place between workers, departments, or teams within the organization and thus is created a learning organization at the intersection of tacit and explicit knowledge.

2.3. Socialization, Externalization, Combination, Internalization (SECI) Model

One of the most famous theories of organizational knowledge is Nonaka's Spiral of Knowledge. Nonaka developed this theory in 1991 with the objective to develop a model to understand how to build organizational knowledge and make organizations understand how they can maximize the management, application, and transfer of knowledge.

Nonaka and Takeuchi (1995) introduced a cyclical knowledge transfer model typically suiting creative organizations. This model comprised four phases of knowledge conversion (Figure 1) namely socialization, externalization, combination, and internalization (SECI).

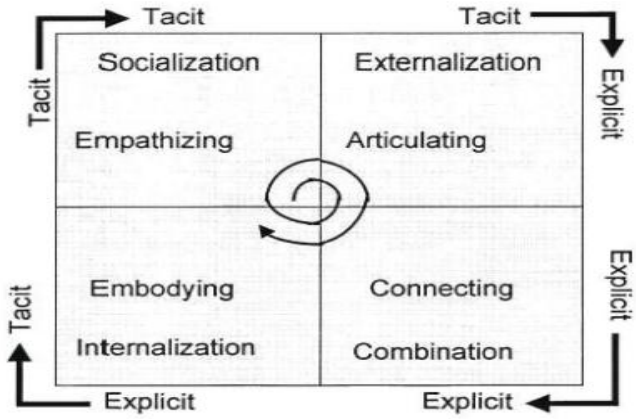

Figure-1. *SECI* Model.
Source: Nonaka and Takeuchi (1995).

Each of these processes has been explained in the context of organizational learning and knowledge management. According to Nonaka and Toyama (2003) the process of socialization is the most basic process in disseminating knowledge. Socialization is measured by using 5 indicators: informal knowledge sharing, service improvement, maintaining relationships with colleagues, maintaining relationships with employers, and work problems. Nonaka and Konno (1998) define externalization as a process accomplished by writing a description of the work process through debate or reflection. Externalization is measured using five indicators: new employees training, learning from experts, work documents, information dissemination, and organized learning. Nonaka and Takeuchi (1995) believe that combination is a source of knowledge used for the knowledge management cycle. The combination is also assessed using five indicators which consist of strengthening cooperation and coordination, supporting different team section, supporting distribution process, supporting cooperation, and concerning the work goals. Nonaka and Konno (1998) internalization is the process of conversion of the explicit knowledge into tacit knowledge. In other words, this can be said as the process of realizing explicit knowledge into individual tacit knowledge. Internalization is also measured using five indicators such as virtual learning, self-development opportunity, publication development, global network development, as well as increase benefits for self-development.

2.4. Implementation of Information Technology

Information Technology (IT) has always experienced rapid changes and developments (Amin et al., 2019) Such developments can be said to be a very big driving force for the increasing interest of organizations in knowledge management (Gonaim, 2019). There are three factors why knowledge management is very popular: (1) the increased virtual collaboration space for increasingly dispersed organizations; (2) the increasing importance of intellectual capital for its ability to learn quickly and continuously as a determining factor for success; and (3) technological advances that enable a manipulation of various forms of data and information. Meanwhile, when telecommunication and network technology advances, knowledge management technology can be said to experience very dynamic growth.

Furthermore, the use of information technology for an organization is determined by many factors. One of which is the characteristics of users that act as valuable human resource assets. These human resources in information technology consistently provide solutions to business problems and improve business opportunities. Meanwhile, according to Risdianto, Darmawan, Kristiawan, Wachidi, and Riyanto (2020), in order to make information technology work effectively for contributing to performance, members of the organizations should be able to use technology properly. Moreover, rapid development of information technology becomes a competitive weapon that must be owned by organizations to win a competitive edge. The application of information technology

is said to be successful if it improves the employee performance, which in turn should improve performance of the organization. This shows that with the implementation of information technology, organizations need to consolidate their human resources. This is consistent with Kristiawan (2014) and Akpochafo (2020) who have also recognized the role of the information technology in helping complete the operational tasks and development of the intellectual assets or the human element.

According to Kristiawan and Muhaimin (2019); Maryanti, Rohana, and Kristiawan (2020) information technology focuses on the use of computers and technology to regulate information resources. This is also clarified by Apriana et al. (2019) who emphasized that in order for information technology to run effectively and contribute to performance, employees in the organization must be able to use the technology properly (Al Arood, Aljallad, & Baioumy, 2020). Kristiawan et al. (2019) proposed technology compatibility construct to be used as a basis for user evaluation and measuring the success of an information system. This success is marked with the increased performance of individuals in the organization. Moreover, there are several indicators to measure the implementation of information technology individually namely its impact on task effectiveness and productivity; the utilization of services that can improve individual performance; the ease of finding the latest data; the completion of assignments on time; the special authorization/permission to access data that needs to be done at work; and the level of trust in the new information system. Some previous studies have concluded that the social mechanism in knowledge sharing had actually a product of information technology from where were inherited the definitions and characteristics of what is referred to as Knowledge Management System (KMS). KMS is thus the integration and synergy between modern or latest information technology and social/structural mechanisms for collaborative knowledge management practices.

2.5. The Performance

Performance is defined by Thomson (1992) as an activity which demands the expenditure of energy or creation of effort from 'raw materials' or from products or services that people value; in other words, it can be said that performance is the process of creating value in a resource unit. According to Gibson, John, and James (1999) performance is the desire of any employee behavior performance. Rivai, Sagala, and Ella (2013) described performance as the key to achieving productivity because of which people and other resources exist in the organization and bring the final results based on the quality levels and standards that have been set. According to Mondy (2008) individual performance is the work of a person both in terms of quality and quantity based on predetermined work standards, a view also shared by Andriani, Kesumawati, and Kristiawan (2018); Renata, Wardiah, and Kristiawan (2018); Salwa, Kristiawan, and Lian (2019).

Since this study examines the performance level of a high school headmaster, it is assumed that an effective headmaster has a wide range of abilities. Duignan (2004) identified five basic capabilities of a headmaster that are interdependent and related in nature as shown in Figure 2.

These five capabilites include: (1) educational capabilities which are the main prerequisite in maintaining the focus of the headmaster's attention to the teaching and learning process. The (2) personal capabilities and (3) relational capabilities highlight the headmasters' leadership orientation towards the important role of the people orientation, educators, education staff, learners, and stakeholders. The (4) intellectual capabilities and (5) organizational capabilities represent the form of achievement orientation (effectiveness, efficiency of the process, learning outcomes and environment) towards the performance of headmasters.

Figure-2. Dimension of the ability of headmasters.
Source: Duignan (2004).

Likewise, Clifford, Fetters, and Yoder (2014) also explains five important dimensions of a headmaster's performance:

1. Build common goals
   The leader develops an interesting vision of the organization together and ensures the vision that lives in the daily work of educators.
2. Focus on learning
   Leaders are involved in instructional leadership to develop and maintain student access to the right, ambitious, and strong instructional programs that are focused on academic excellence and social-emotional development.
3. Manage organizational resources
   Leaders act strategically and systematically to create safe and supportive conditions for teaching and learning by releasing financial, human, data, and other resources.
4. Collaborate with the community
   Leaders ensure that parents and community organizational are involved with school.
5. Lead with integrity
   Professional leaders act with integrity and always have desire to learn.

2.6. Research Model and Hypothesis

The model of the current research is presented in Figure 3 .

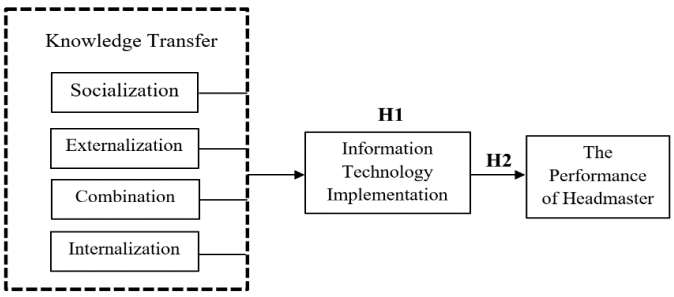

Figure-3. Research model.
Source Duignan (2004).

Based on the figure above, the hypotheses built in this study are:

1. Socialization affects the performance of headmaster in state high schools and state vocational high schools of South Sumatra Province through the implementation of information technology.
2. Externalization has an effect on the performance of headmaster in state high schools and state vocational high schools of South Sumatra Province through the implementation of information technology.
3. Combination influences the performance of headmasters in state high schools and state vocational high schools of South Sumatra Province through the implementation of information technology.
4. Internalization affects the performance of headmaster in state high schools and state vocational high schools of South Sumatra Province through the implementation of information technology.
5. Socialization, Externalization, Combination, and Internalization collectively influence the performance of headmaster in state high schools and state vocational high schools of South Sumatra Province through the implementation of information technology.
6. The implementation of information technology affects the performance of headmaster in state high schools and state vocational high schools of South Sumatra Province.

3. METHODS

3.1. Population and Sample

The population in this research comprised 255 headmasters of state senior high schools and state vocational high schools in South Sumatra, Indonesia. By making use of nonprobability sampling and purposive sampling methods, 167 headmasters were selected as respondents of this study. The time of distribution and collection of questionnaires was 30 days.

3.2. Measurement

Two instruments were used to measure the research variables:

1. SECI: The instrument used to measure SECI was a questionnaire consisting of 20 items based on Nonaka and Toyama (2003). All items contained variables that SECI stands for such as socialization, externalization, combination, and internalization. The items were measured using a seven-point Likert scale (1-7).
2. The performance of headmaster: The instrument to measure the performance of headmaster was a questionnaire developed by Clifford et al. (2014) containing 16 statement items. The items reflected the indicators of the headmasters' performance namely the effects on building common goals, focusing on learning, managing organizational resources, collaborating with the community, and leading with integrity. The items were measured using a seven-point Likert scale (1-7).

4. RESULTS AND DISCUSSION

4.1. Validity Test on Questionnaire Trials

From the 167 sets of questionnaire distributed to headmasters, 159 sets were returned by the respondents and 154 sets could be used to process data. Table 1 illustrates the profile of the respondents in this study.

Table-1. Profile of respondents.

No	Demographic Type	Profile	Percentage (%)
1	Gender	Male	82,5
2	Age Range	51-55 (years)	44,2
3	Education level	Stratum 2	76,6
4	Working period (Educator)	21-30 (years)	66,9
5	Working period (Headmaster)	4-6 (years)	31,2

Source: Processed Primary Data, 2019.

Table 1 presents that a majority of the respondents were male (82,5%) with the age range of 51 to 55 years (44,2%). The education level of the majority of respondents was stratum 2 with working period as an educator/teacher of 21 to 30 years (66,9%) and as a headmaster of 4 to 6 years (31,2%).

After testing various assumptions of *SEM*, reliability, validity, and exogenous-endogenous confirmatory analysis was carried out as illustrated in Table 2. The indicators and variables in this study were used to test the full model that was designed as an empirical model for this study.

Table-2. Estimate regression weight structural equation modeling.

			Estimate	S.E.	C.R.	P
The Performance of Headmaster	<---	Socialization	3.641	.720	5.058	***
The Performance of Headmaster	<---	Externalization	3.107	9.940	1.319	.187
The Performance of Headmaster	<---	Combination	9.666	9.117	1.060	.289
The Performance of Headmaster	<---	Internalization	3.727	.674	5.530	***

Source: Processed Primary Data, 2019.

Table-3. Regression weight structural equation model socialization, externalization, combination and internalization affect the performance of headmasters.

Variable			Estimate	S.E.	C.R.	P	Label
The Performance of Headmaster	<---	SECI	1.504	.252	5.976	***	

Source: Processed Primary Data, 2019.

The research results both support and oppose the hypotheses formulated for this study. The first hypothesis which stated that socialization has an effect on the performance of headmasters and that the higher is the socialization, the greater is the performance of headmaster is accepted. The results of the analysis suggest that the when the socialization variable increases, it also increases the performance of headmasters. This is an indication of the fact that the school's success is strongly influenced by the ability of schools to create relationships. Schools that cannot build and develop relationships do not build good relationship with the community and parents, due to which the school fails to achieve success. This also suggests that socialization can enable the school to fulfill the desires and satisfy the needs of the students. These results are in line with the research conducted by Irmayani et al. (2018); Lian, Kristiawan, and Fitriya (2018) while socialization and internalization have significant results that influence organizational performance. Nonaka et al. (2001); Nonaka and Toyama (2003) also state that socialization, which takes place through discussions, stories, and sharing various experiences, is the most basic process in disseminating knowledge and enacting social interaction between individuals and produce tacit knowledge.

The second hypothesis states that externalization influences the performance of headmasters. Based on the analysis of the findings of the study, externalization is found to make no impact on the performance of headmasters. The reason is that the effect of 0.187 or (p-value> 0.05) or CR 1.319 ≤ 1.967 is not significant. This suggests that if there is an increase in externalization, the performance of headmaster will not experience an increase. However, on the contrary, if there is a decrease in externalization, the implementation of information technology will not encounter a decline. The results of this study however cannot be proven to be empirically strong to accept Ho and then reject H2. In short, the hypothesis stated in this study that the higher is the externalization, the higher is the performance, is rejected. This is in accordance with the findings of Nonaka and Toyama (2003) which stated that the externalization is the process of changing/translating knowledge, generally in the form of writing or drawing. The externalization process can only help change someone's tacit knowledge into explicit knowledge since the understanding of each individual recipient's knowledge cannot be easily understood by others.

The third hypothesis suggests that combination affects the performance of headmaster. Based on the results of this study, it is concluded that combination empirically does not have any influence since the 0.289 impact is not significant (at p-value> 0.05) or CR 1, 012 ≥ 1.967 towards the performance of headmaster. This indicates that an

increase in combination will not cause any increase in the performance of headmaster and vice versa. This is contrary to the opinion of Nonaka and Takeuchi (1995) though it supports the results of this study stating that combination is a source of knowledge management cycle where the documented knowledge can be disseminated in the form of documents or through the process of education and training. This also explains that the combination variable has no effect in term of processing the setting of tacit to explicit by doing the combination (e.g. organizing, mixing knowledge) through combining various type of explicit knowledge. This can be exemplified in terms of education and training of headmasters. The reason is that headmasters are only carrying out tasks from superiors without regard to the benefit of the training and therefore cannot see the potential knowledge transfer process.

The fourth hypothesis mentions that internalization affects the performance of headmaster. The results of this study fulfill the terms of acceptance of this hypothesis, thai = t is *CR* value (5,530) ≥ 1,96 on significant level 0,000. The conclusion is that there is evidence to reject Ho and accept H4, so that one can get the indication that if there is an increase in internalization, the performance of headmaster will also increase. Based on the analysis of the study, internalization variable characterizes virtual learning; it is seen as opportunity to develop holistically -- publication development, global network development, increase benefits for self-development and like (Mawad, 2020). This suggests that an increase in internalization will increase the performance of headmasters. This study is similar to the research by Nonaka and Toyama (2003) who stated that in the process of internalization, there is a change of the explicit knowledge into the tacit knowledge. It is generally carried out through a process of learning and/or research that is carried out or experienced by each individual. Tara, Wardhani, and Lusa (2018) assert that knowledge is processes from explicit to tacit by using the internalization process, involving the acquisition and implementation of individual knowledge, which is covered by learning of the process of doing it alone. On the other hand, explicit knowledge becomes part of individual knowledge and soon becomes an asset for the organization. Internalization is also the ability to see connections and recognizes patterns and capacities to process understanding between fields, ideas and concepts.

The fifth hypothesis proposed that socialization, externalization, combination, and internalization together influence the performance of headmasters. Based on the analysis of the findings of this study, this hypothesis is accepted. This is empirically shown by the significant effect on the performance of headmaster. The coefficient value obtained with all p-value *is* significant in terms of accepting the p-value of < 0.05, which means that all the variables viz., socialization, externalization, combination, and internalization, directly make an effect on the performance of headmasters, with value of CR 5.976 ≥ 1.96. The results of this study are in line with the Travaille and Hendriks (2010); Aljraiwi (2019); Rasiman, Prasetyowati, and Kartinah (2020) which discuss how the knowledge creation process contributed to academic success. This result advocates independent exploration of knowledge in the university's research departments. This research also shows the importance of the extraordinary socialization process though it is underappreciated. It also shows that knowledge is usually defined at individual level of interactions amidst groups and institutions. This requires four knowledge creation process viz., socialization, externalization, combination, and internalization which would help organizations to run smoothly.

The results also suggest that the performance of headmasters is closely related between indicators, namely monitoring the progress of the school towards the achievement of the mission and objectives specifically related to the achievement of student learning education, as a dimension of shared goals. Secondly, the dimension of focus on learning too has indicators such as monitoring teaching to ensure instructional priorities and application of ambitious teaching standards, and monitoring the teacher's progress in developing a positive climate of class and students on the social, emotional, and academic grounds. Empirical evidence concludes that these indicators are interpreted and characterized in one dimension, namely entering into the dimensions of building a common goal (Aljraiwi, 2019).

One of the important findings of this research is that the process of knowledge transfer that involves socialization, externalization, combination and internalization of headmasters can improve the performance of the

headmaster to build shared goals, manage organizational resources, collaborate with the community and lead with integrity. This is consistent with the study of Clifford et al. (2014), but that study did not include the focus on teaching and learning as a part of performance appraisal. The reason behind this inconsistency was that the latest minister of education and culture had issued regulations that headmasters should act as managers. This decision was taken on the ground that headmasters were not too focused on doing things related to learning but always thought how to advance the school's image; how to achieve the school's vision and mission or increase school resources, and how to collaborate with the community, to lead the school with a spirit of integrity (Gonaim, 2019).

5. CONCLUSION

This research is expected to be a reference for other researchers who are interested in SECI variables. SECI consists of socialization, externalization, combination, and internalization which were found to have a positive and significant effect on the performance of the headmaster through the implementation of information technology. This study had several limitations in terms of the number of headmasters who were the unit of analysis and also respondents. Therefore, subsequent research is expected to involve more headmasters of senior high schools and vocational high schools from both public and private institutions. It is also suggested to increase the number of variables.

Funding: This study received no specific financial support.
Competing Interests: The author declares that there are no conflicts of interests regarding the publication of this paper.
Acknowledgement: Author would like to express my special thanks and gratitude to Rector Universitas PGRI Palembang and all my friends in Universitas PGRI Palembang who provided me useful support to complete this wonderful project.

REFERENCES

Abdel-Maksoud, N. F. (2018). When virtual becomes better than real: Investigating the impact of a networking simulation on learning and motivation. *International Journal of Education and Practice*, *6*(4), 253-270. Available at: https://doi.org/10.18488/journal.61.2018.64.253.270.

Akpochafo, G. O. (2020). Factors influencing undergraduates' choice of teaching as a career (FIT-Choice) in Nigeria. *International Journal of Education and Practice*, *8*(1), 121-133. Available at: https://doi.org/10.18488/journal.61.2020.81.121.133.

Al Arood, M. A. S., Aljallad, M. Z., & Baioumy, N. (2020). The effectiveness of a cloud-based learning program in developing reflective thinking skills in islamic education among students in UAE. *International Journal of Education and Practice*, *8*(1), 158-173. Available at: https://doi.org/10.18488/journal.61.2020.81.158.173.

Alavi, M., & Dorothy, E. L. (2001). Knowledge management and knowledge management system : Conceptual foundation and research issues. *MIS Quarterly 25*(1), 1017-1136.

Aljraiwi, S. (2019). Effectiveness of gamification of web-based learning in improving academic achievement and creative Thinking among primary school students. *International Journal of Education and Practice*, *7*(3), 242-257. Available at: https://doi.org/10.18488/journal.61.2019.73.242.257.

Amin, M. Z. M., Rashid, R. A., & Teh, K. S. M. (2019). Investigating issues and challenges in employing action research for teacher training in Malaysian context. *International Journal of Education and Practice*, *7*(1), 30-40. Available at: https://doi.org/10.18488/journal.61.2019.71.30.40.

Andriani, S., Kesumawati, N., & Kristiawan, M. (2018). The influence of the transformational leadership and work motivation on teachers performance. *International Journal of Scientific & Technology Research*, *7*(7), 1316-1330.

Apriana, D., Kristiawan, M., & Wardiah, D. (2019). Headmaster's competency in preparing vocational school students For entrepreneurship. *International Journal of Scientific & Technology Research*, *8*(8), 1316-1330.

Baridwan, Z. (2012). *Accounting system (Compilation, procedure, and method) [Accounting system (Preparation, procedure, and method)]*. Yogyakarta: BPFE.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99-120. Available at: https://doi.org/10.5771/0935-9915-2004-1-53.

Bhatt, D. (2000). EFQM excellence model and knowledge management implication. Retrieved from: http://www.eknowledgecenter.com/articles/1010/1010.html.

Clifford, M., Fetters, J., & Yoder, N. (2014). *The five essential practices of school leadership a framework for assessing practice.* Washington, DC: American Institutes For Research.

Conner, K. R., & Prahalad, C. K. (1996). A resource-based theory of the firm: Knowledge versus opportunism. *Organization Science*, *7*(5), 477-501. Available at: https://doi.org/10.1287/orsc.7.5.477.

Davenport, T. H., & Lawrence, P. (1998). *Working knowledge: How organizations manage what they know.* Boston: Harvard Business School Press.

Drucker, P. (1995). *Management and enterepreuneuship*. Jakarta: Erlangga.

Duignan, P. (2004). Forming capable leaders; from competences to capabilities. *New Zealand Journal of Educational Leadership*, *19*(2), 5-13.

Fitria, H., Kristiawan, M., & Rasyid, A. (2019). The educational character on instruction. *Option*, *35*, 964-979.

Ghani, E. K., & Muhammad, K. (2019). Industry 4.0: Employers' expectations of accounting graduates and its implications on teaching and learning practices. *International Journal of Education and Practice*, *7*(1), 19-29.

Gibson, J. L., John, M. I., & James, H. D. (1999). *Organizational: Behaviour, structure, process.* Texas, USA: Business Publication Inc.

Gonaim, F. A. (2019). Leadership in higher education in Saudi Arabia: Benefits, constraints and challenges of adopting servant leadership model by department chairs. *International Journal of Education and Practice*, *7*(2), 101-111. Available at: https://doi.org/10.18488/journal.61.2019.72.101.111.

Greene, H. A., & Petty, W. T. (1976). *Developing language skills in the elementary schools.* Boston: Allyn and Bacon, Inc.

Irmayani, H., Wardiah, D., & Kristiawan, M. (2018). The strategy of SD Pusri in improving educational quality. *International Journal of Scientific & Technology Research*, *7*(7), 113-121.

Kristiawan, M. (2014). A model for upgrading teachers competence on operating computer as assistant of instruction. *Global Journal of Human-Social Science Research*, *4*(5), 43-55.

Kristiawan, M., & Muhaimin, M. (2019). Teachers' obstacles in utilizing information and communication technology. *International Journal of Educational Review*, *1*(2), 56-61.

Kristiawan, M., Nizarani, & Syamsidar. (2019). Role of school on forming character of Z-generation through entrepreneurial skills. *International Journal of Scientific & Technology Research*, *8*(10), 1941-1945.

Lian, B., Kristiawan, M., & Fitriya, R. (2018). Giving creativity room to students through the friendly school's program. *International Journal of Scientific & Technology Research*, *7*(7), 1-7.

Malhotra, Y. (1998). Knowledge management, knowledge organizations & knowledge workers: A view from the front lines [WWW document]. Retrieved from: http://www.brint.com/interview/maeil.html.

Maryanti, N., Rohana, R., & Kristiawan, M. (2020). The principal's strategy in preparing students ready to face the industrial revolution 4.0. *International Journal of Educational Review*, *2*(1), 54-69.

Masrek, M. N., & Zainol, N. Z. M. (2015). The relationship between knowledge conversion abilities and academic performance. *Procedia-Social and Behavioral Sciences*, *174*, 3603-3610. Available at: https://doi.org/10.1016/j.sbspro.2015.01.1078.

Mawad, G. (2020). Impact of electronic interaction patterns in a collaborative learning and instructional anchors-based environment on developing instructional design skills and achievement motivation. *International Journal of Education and Practice*, *8*(1), 86-105. Available at: https://doi.org/10.18488/journal.61.2020.81.86.105.

Mondy, R. W. (2008). *human resource management.* Jakarta: Erlangga.

Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review*, *69*(6), 96-104.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, *5*(1), 14-37. Available at: https://doi.org/10.1287/orsc.5.1.14.

Nonaka, I., & Konno, N. (1998). The concept of "Ba": Building a foundation for knowledge creation. *California Management Review, 40*(3), 40-54. Available at: https://doi.org/10.2307/41165942.

Nonaka, I., & Toyama, R. (2003). The knowledge-creating theory revisited: Knowledge creation as a synthesizing process. *Knowledge Management Research & Practice, 1*(1), 2-10. Available at: https://doi.org/10.1057/palgrave.kmrp.8500001.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation.* England: Oxford University Press.

Nonaka, I., Toyama, R., & Konno, N. (2001). SECI, ba and leadership: A unified model of dynamic knowledge creation. In I. Nonaka & D. J. Teece (Eds.) managing industrial knowledge: Creation, transfer and utilization (pp. 13-39). London: Sage.

Penrose, R. T. (1959). *The theory of the growth of the firm.* Great Britain: Basil Blackwell and Mott Ltd.

Rasiman, Prasetyowati, & Kartinah, D. (2020). Development of learning videos for junior high school math subject to enhance mathematical reasoning. *International Journal of Education, 8*(1), 18-25. Available at: https://doi.org/10.18488/journal.61.2020.81.18.25.

Renata, R., Wardiah, D., & Kristiawan, M. (2018). The influence of headmaster's supervision and achievement motivation on effective teachers. *International Journal of Scientific & Technology Research, 7*(4), 44-49.

Risdianto, E., Darmawan, A., Kristiawan, M., Wachidi, & Riyanto. (2020). Rasch model analysis on the feasibility test of basic physics II practical guide using augmented reality. *ARPN Journal of Engineering and Applied Sciences, 15*(4), 482-490.

Rivai, V., Sagala, S., & Ella, J. (2013). *Human resources for companies from theory to practice.* Jakarta: Rajawali Pers.

Salcedo, N., & Del Carmen, M. (2017). Virtual learning environment: Exploring the role of teacher as a central factor. *International Journal of Education and Practice, 5*(12), 217-224.

Salwa, Kristiawan, M., & Lian, B. (2019). The effect of academic qualification, work experience and work motivation towards primary school principal performance. *International Journal of Scientific & Technology Research, 8*(8), 969-980.

Spender, J. C. (1996). Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal, 17*(S2), 45-62. Available at: https://doi.org/10.1002/smj.4250171106.

Sveiby, K. E., & Tom, L. (1987). *Managing know how: Add value by valuing creativity.* London: St Edmudsburry Press Ltd.

Swan, J., Scarborough, H., & Preston, J. (1999). *Knowledge management - the next fad to forget people?* Paper presented at the Proceedings of the 7th European Conference on Information Systems, Copenhagen.

Tara, E. I., Wardhani, D., & Lusa, S. (2018). *Knowledge management system in rental company with socialization, externalization, combination, internalization method case study.* Jakarta: PT Surya Sudeco.

Thomson, G. F. (1992). *A textbook of Human resources management.* London: Institute of Personal Management.

Tobari, Kristiawan, M., & Asvio, N. (2018). The strategy of headmaster on upgrading educational quality in Asean economic community (AEC) Era. *International Journal of Scientific & Technology Research, 7*(4).

Travaille, A. M., & Hendriks, P. H. (2010). What keeps science spiralling? Unravelling the critical success factors of knowledge creation in university research. *Higher Education, 59*(4), 423-439. Available at: https://doi.org/10.1007/s10734-009-9257-2.

Wernerfelt, B. M. (1995). The resource-based view of the firm: Ten years after. *Strategic Management Journal, 16*(3), 171-174.