

The Effects of Knowledge Management on School Performance among Teachers in Indonesia

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This current study tried to investigate the impact of Knowledge Management (KM) on improving quality of school performance. To fulfil this objective, 150 Instruments were distributed to randomly selected teachers who are working in State High School, Depok, West Java Indonesia. Next, an inferential analysis was used to find out if any significant differences were found. Moreover, to know the relationship between Knowledge Management indicators and school performance and to determine the contributor of school performance through Knowledge Management, which consisted of ten indicators that are suspected to be a contributor in improving school performance. After analysing the data, the results indicated a significant improvement in school performance after utilising a Knowledge Management approach. Thus, the performance of schools can be improved by the effort of improvement of specialised Knowledge Management on the factors of digital sophistication, knowledge creation, knowledge sharing and team work and communication learning.

Key words: *Knowledge Management, School Performance, High School, Education Quality.*

Introduction

To produce quality of school performance it forms various activities in the school and its existence of management within the school that provides convenience in managing various school activities. Performance is a combination of existing motivation in a person and his ability to perform a job (Fielman, 1999). Relating this to schools it can be said as the ability of the school to carry out the duties and responsibilities as an educational institution by empowering various school resources in producing quality. School performance is seen from the quality of services provided by the school institution to the customer (students,

community). Producing quality education in schools requires a high level of Knowledge Management. Knowledge includes insight, skill, wisdom, and practices that allows people to use the information available to achieve their goals (Kidwell, Van der Linde & Johnson 2001). Knowledge Management (KM) has a knowledge-based work change and an increasingly complex problem facing the organisation to overcome, it can only be solved if the knowledge is available well (Sallis & Jones 2002; McNeil 2011). KM is a challenge for the education field and needs to be taken seriously to facilitate knowledge utilisation and creation (Shaghaei and Turgay, 2013). Mechanisms and processes of Knowledge Management refer to the creation, collection, storage, retrieval, dissemination and utilisation of organisational knowledge (Nurluoz & Birol, 2011). KM in an organisation requires a good administrative pattern, the existence of the file which is stored well in the organisation will maintain the Knowledge Management of the organisation. This is done to maintain Knowledge Management within the organisation. As Petrides & Nodine (2003) discloses, organisational knowledge can be lost when people leave the organisation and take what they know with them. Thus, the organisation needs a good step in securing the Knowledge Management it has. It also applies to educational institutions, therefore, educational institutions should take the lead in making Knowledge Management an essential part of organisational culture (Sallis & Jones, 2002). Sallis and Jones (2002) provide a self-assessment checklist of useful Knowledge Management with assessment elements such as: vision and mission, strategy, organisational culture, intellectual capital, learning organisation, leadership and management, teamwork and community learning, knowledge sharing, knowledge creation, digital sophistication for organisations. With regard to organisations, according to Nejati, Shahbudin and Amran (2010), organisations are increasingly seeking competitive advantage in the effective and unique use and development of knowledge. This is because Knowledge Management is a combination of various aspects of interrelated resources that will have an impact on the development and improvement of the quality of management itself, the resource aspect consists of people, processes, and technology. Although Knowledge Management that has been developed is widely applied in business organisations, in educational institutions Knowledge Management can also be applied. Creation of knowledge involves the development of new knowledge or replacing existing knowledge with new content (Nonaka, 1994). As expressed by Omona, Van der Weide & Lubega (2010) educational institutions can successfully implement a Knowledge Management framework within educational institutions. Implementation of Knowledge Management in educational institutions is done to produce high school performances, achievement of school performance became one of the goals to be achieved by schools in improving the quality of education.

Literature Review

Knowledge is information combined with experience, context, interpretation and reflection (Davenport et al. 1998). Stewart (1997) states that an important step in value creation through the transformation of information into knowledge can determine what kind of profit an organisation has. In organisations, knowledge exists within organisational routines, processes, practices and norms (Davenport and Prusak 1998).

With regard to Knowledge Management, Cong and Pandya (2003) state that Knowledge Management is the "ability of an organisation to use its collective knowledge through a process of knowledge generation, sharing and exploitation enabled by technology to achieve its objectives". According to Jashapara (2011) Knowledge Management is "The achievement of the organisation's goals by making the factor knowledge productive". KM can maximise the effectiveness associated with organisational knowledge and prosperity (Wiig 2004). The practice of sharing and transferring knowledge should be tailored to the organisation. (Willem & Buelens, 2007).

KM as a multidisciplinary domain of the internet with origins in philosophy, economics, organisational theory, information systems, marketing, management strategies, innovation research and organisational learning (Butler, feller, Pope, Barry and Murphy, 2003). Misra, Hariharan & Khaneja (2003) affirms that Knowledge Management is based on three domains that need to be managed, i.e. people (value and behaviour), processes (internal structure) and technology.

The purpose of this research is to know the contributor to school performance in Senior High School in Depok, West Java Indonesia, through the Knowledge Management aspect. High school performance is a priority of schools in improving the quality of education, development and improvement of teacher performance is done with the Knowledge Management.

Methods

The research instrument used is the Knowledge Management model adapted in this research is by Sallis & Jones (2002), which consists of ten characteristics, namely: vision and mission, strategy, organisational culture, intellectual capital, learning organisation, leadership and management, teamwork and community learning, knowledge sharing, the creation of knowledge and digital sophistication consisting of 70 items used in the study.

The Organisational Performance Model was adapted from Singh, Chan & McKeen (2006). In the study the performance is divided into 3 sub-variables to enable better division



interpretation in the findings section. The 3 sub-variables are the ability, agility of innovation and competitive action consisting of 20 items used in the study.

Instruments were distributed to randomly selected teachers who are working in State High Schools in Depok, West Java Indonesia. From 150 instruments spread to teachers, successful researchers collected as many as 144 instruments that have been filled or answered by teacher, as many as 144 instruments that will be used as data in this study.

In summary, the data in this research was analysed by means of a range of statistical techniques, which includes an inferential analysis through correlation and regression analysis. Inferential analysis was used to find out if any significant difference were found. Moreover, to know the relationship between Knowledge Management indicators and school performance and to determine the contributors of school performance through Knowledge Management, which consisted of ten indicators that are suspected to be a contributor in improving school performance. The 20th version of SPSS was used to conduct data analysis.

Results and Discussion

Correlation Analysis of School Performance and Knowledge Management

Pearson correlation analysis on school performance and Knowledge Management variables can be seen in Table 1.

Table 1: Correlation Analysis of School Performance and Knowledge Management.

No	Indicator	Ability	Agility of Innovation	Competitive Action	School Performance
1	Vision and mission	.225**	.284**	.261**	.315**
2	Strategy	.344**	---	.364**	.340**
3	Organisational culture	.454**	.374**	.361**	.488**
4	Intellectual capital	.254**	.523**	.355**	.468**
5	Organisational learning	.358**	.284**	.394**	.418**
6	Leadership and management	.405**	.293**	.485**	.474**
7	teamwork and community learning	.552**	.364**	.369**	.527**
8	sharing knowledge	.416**	.664**	.351**	.599**
9	Creation of knowledge	.418**	.417**	.606**	.578**
10	Digital sophistication	.384**	.434**	.448**	.515**

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

From table 1 it can be seen that vision and mission indicators have a relationship with school performance along with the indicator that is ability, agility of innovation and competitive action equal to $r=0.225$, $r = 0.284$, $r=0.261$, $r=0.315$ significant at the levels 0.05 and 0.01. Strategic indicators have significant relationships with school performance and the indicator is $r = 0.344$, $r = 0.364$, $r = 0.340$, where the indicator strategy has no significant relation to agility of innovation indicator. The indicator of organisational culture has a relationship with school performance and its indicator is $r = 0.454$, $r = 0.374$, $r = 0.361$, $r = 488$. The indicator of intellectual capital has a relationship with school performance and its indicator is $r = 0.254$, $r = 0.523$, $r = 0.355$, $r = 0.468$. The indicator of learning organisation has a relationship with school performance and its indicator is $r = 0.358$, $r = 0.284$, $r = 0.394$, $r = 0.418$. The leadership and management indicators have a relationship with school performance and its indicators are $r = 0.405$, $r = 0.293$, $r = 0.485$, $r = 0.474$. The indicators of team work and community learning are related to school performance and the indicator is $r = 0.552$, $r = 0.364$, $r = 0.369$, $r = 0.527$. The indicators of knowledge sharing has a relationship with school performance and its indicators are $r = 0.416$, $r = 0.664$, $r = 0.351$, $r = 0.599$ and the knowledge creation indicator is related to

school performance and its indicators are $r = 0.418$, $r = 0.417$, $r = 0.606$, $r = 0.578$. The digital sophistication indicator is related to school performance and its indicators are $r = 0.384$, $r = 0.434$, $r = 0.448$, $r = 0.515$. From the results of the study it also found that the indicators of knowledge sharing and knowledge creation have the highest correlation with school performance $r = 0.599$, $r = 0.578$. Thus, it can be said that based on the Pearson correlation analysis Knowledge Management has a positive relationship on school performance.

Regression Analysis of School Performance and Knowledge Management

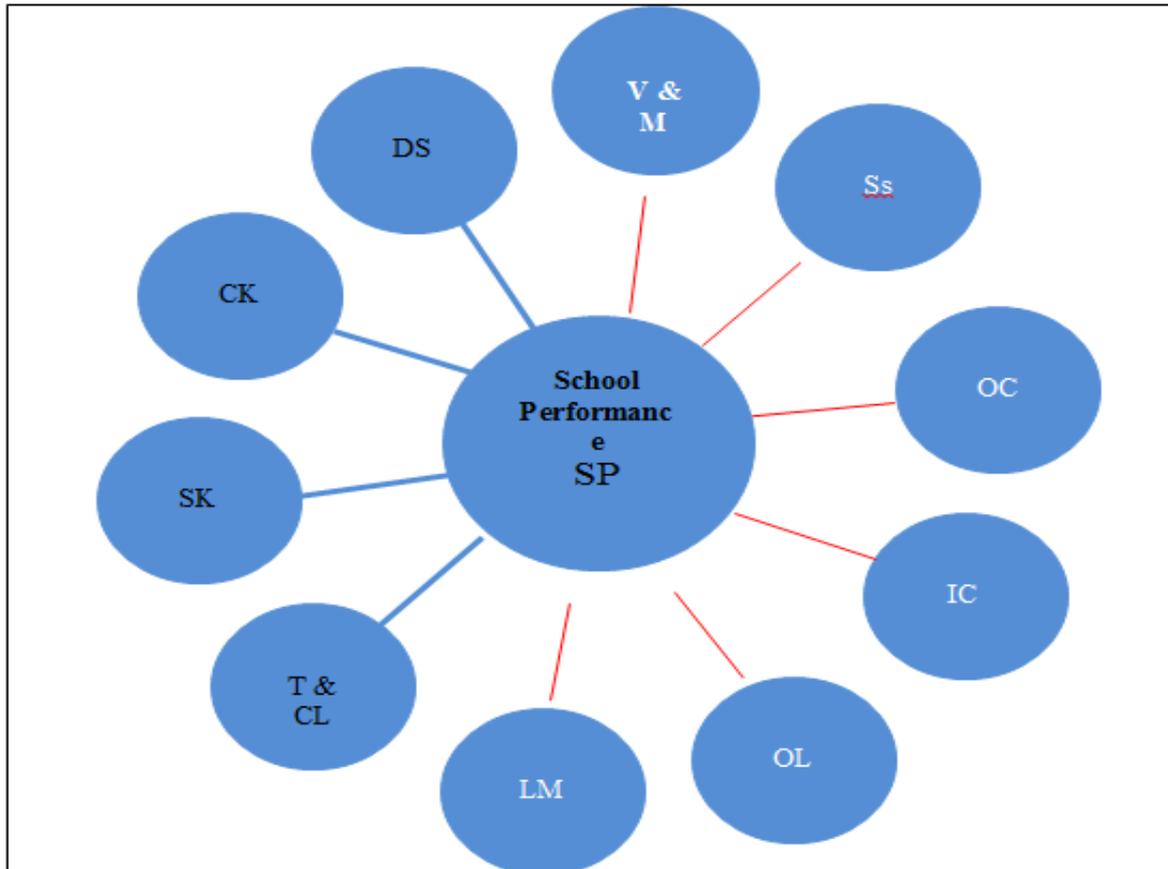
Table 2: Regression Analysis of Research Variables

Variable	Regression Analysis	Sig.
Variable dependent school performance		
Variable Independent		
Vision and mission (V & M)	----	.138
Strategy (Se)	----	.216
Organisational Culture (OC)	----	.017
Intellectual Capital (IC)	----	.118
Organisational Learning (OL)	----	.797
Leadership and Management (LM)	----	.183
Teamwork and community Learning (T & CL)	.214	.001
Sharing Knowledge (SK)	.217	.003
Creation of Knowledge (CK)	.218	.001
Digital Sophistication (DS)	.234	.001

From table 2, it can be seen that Knowledge Management contributes to school performance through team work and the community learning indicator, sharing knowledge, the creation of knowledge and digital sophistication of $\beta = 0.214$, $p < .05$, $\beta = 0.217$, $p < .05$, $\beta = 0.218$, $p < .05$, $\beta = 0.234$, $p < .05$. Knowledge Management indicators that have the largest contribution are digital sophistication of 0.234, followed by the creation of knowledge, sharing knowledge and teamwork and community learning. While other indicators of Knowledge Management in this study have no contribution to school performance. Thus, from the results of this study it can be concluded that the improvement of school performance based on regression analysis can be improved by the improvement and improvement of quality of indicators of digital sophistication, creation of knowledge, sharing knowledge and teamwork and community learning. This study is in line with research conducted by Chu, K.W., Wang, M., & Yuen, A.H.K. (2011) understanding teachers' perception of KM found that the dimensions of people, culture, IT and management can improve teacher work in school; according to teachers the most important

point in KM is sharing knowledge, people, culture and storage of knowledge with IT support. Technology should be appropriately utilised and should be compatible with the tasks supported so that information technology can have a positive impact on individual performance (Guedhue, et.al, 1995). Regression analysis of school performance and Knowledge Management can be described as follows.

Figure 1. Conceptual framework



Note:

- Contribution is Significant (.05)
- Contribution is not Significant (.05)

Adapted from Sallis dan Jones (2002), Singh, Chan & McKeen (2006).

From the results of the study it is known that Knowledge Management (KM) through indicators have a relationship with school performance. Knowledge Management is an important business strategy that enables an organisation to tap into its most valuable resources, collective knowledge, talents and experience to accelerate the rate at which it tackles new market challenges and opportunities (Koulopoulos, and Frappaolo, 2000). The existence of school performance improvement can be done with the knowledge of management (KM) is good, organisational performance will be enhanced with the

Knowledge Management (Davenport and Prusak 1998). Nejati, Shahbudin, and Amran (2010), said organisations are increasingly looking for competitive advantage in the use and development of effective and unique knowledge. Knowledge Management allows for maximisation of organisational effectiveness and prosperity (Wiig, 2004). In an effort to achieve the implementation of Knowledge Management, three important elements are needed, namely people, process, and technology (Bhatt, 2000). In this study, factors that have a high relationship are evident from knowledge sharing and knowledge generation factors, followed by teamwork and learning communities, and digital sophistication. Knowledge Management has become an important factor for organisations that want to increase their productivity and effectiveness (Zack, 1999). Knowledge Management provides organisations with competitive advantage and improves organisational performance because it makes employees smarter (Robbins and Judge, 2007). Shannak et.al., (2012) said the KM strategy must do more than just outline high-level goals but identify the main needs and problems in the organisation, and provide a framework to overcome them. Bhatt, (2000) said that 70% of Knowledge Management implementation is influenced by people, 20% by process and 10% by technology. From these data it can be seen that Knowledge Management is closely related to the quality of human resources in an institution or organisation.

In the absence of management, knowledge can have a negative impact in the improvement of school performance. Schools that have good performance can be seen from the effectiveness and efficiency of school activities. Therefore, educational institutions should be concerned with the design of Knowledge Management as an important part of organisational culture (Sallis & Jones 2002). Organisations use social capital generated from people who often socialise to develop their intellectual capital (Zack, 1999). Knowledge Management practices can provide a framework for distributing research results, teaching practices and effective procedures to improve educational outcomes (Nurluoz & Birol, 2011). There is a simultaneously significant influence of Knowledge Management, increasing teacher capacity for teacher teaching performance (Suryadi and Permana, 2017). Alhawari & Al-jarrah (2012) argue that there are three elements that need to collaborate to influence the successful application of Knowledge Management; this is an emphasis on people, processes and technology. KM becomes a tool that leverages knowledge and involvement in integrative processes with people, processes, and organisational infrastructure (Al-Adaileh & Al-Atawi, 2011). Bontis et al. (2003) explained that Knowledge Management is based on the concept that the most useful organisational resources are the knowledge of individuals.

From this study, it was also found that school performance can be improved by improving the quality of digital sophistication factor, knowledge creation, knowledge sharing, teamwork and communication learning. Digital sophistication is the use of technology in



school management. Low ability in the use of technology can have a negative impact in the creation of skills in Knowledge Management in schools. Technology cannot improve results if it does not have the Knowledge Management system necessary to effectively integrate technology into a shared decision-making process (Petrides & Nodine 2003).

Leung (2010) conducted a study of Knowledge Management in schools in Hong Kong. He found that KM not only provides a platform for teachers to discuss different ideas for teaching and posting resources for student learning, but also retains the expertise of experienced teachers, improves their effectiveness in teaching and learning achievements, supports community development knowledge at school, and fosters a learning culture. Meanwhile Nonaka and Takeuchi (1995) state that Japanese companies have succeeded because they use their expertise to create knowledge for innovation. Interpersonal interactive knowledge sharing emphasises the use of dialogue through social networks, including groups and work teams, and knowledge can be obtained in this way from experienced and skilled people (Swan et al., 2000). In school education, Knowledge Management maintains the expertise of experienced teachers, improves their effectiveness in terms of teaching and learning performance, supports the development of knowledge communities in schools, and fosters learning culture (Leung 2010). Knowledge Management is very useful in various activities in schools. Cheng (2012) conducts research on organisational Knowledge Management and learning within the school context and explores knowledge strategies that can be applied effectively within educational organisations. Schools that have good Knowledge Management will improve the quality of the school, whether in the learning process or other activities.

Conclusion

This study found that school performance has a close relationship with the existence of Knowledge Management as good Knowledge Management in the school will be able to improve school performance. Schools need Knowledge Management as a form of efforts to improve the quality of education in schools. Schools that have Knowledge Management make changes to learning activities in schools so that activities at school will run more effectively and efficiently. So with the effort to improve the Knowledge Management conducted by the principal it can change the quality of school human resources in carrying out the learning activities in school and indirectly will have a good impact on the improvement of educational quality in schools and school performance.



Suggestions

Knowledge Management is very important in school management, producing school performance requires human resources who have high Knowledge Management, therefore there are several suggestions that the researcher wants to provide, namely:

The principal, in improving the quality of school management, the leader (headmaster) must have good Knowledge Management, understanding and be able to implement Knowledge Management in the school, to get quality Knowledge Management with the principal. This can be done by participating in various education and training activities from the government or from professional education institutions.

Knowledge Management is not only needed by the principal in school management, but also by teachers as educators in schools. Good Knowledge Management will provide knowledge and skills to teachers in managing learning activities in schools, so that it will produce a quality learning process.

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REFERENCES

- Al-Adaileh, R. M., & Al-Atawi, M. S. (2011). Organisational culture impact on knowledge exchange: Saudi Telecom context. *Journal of Knowledge Management*, 15 (2), 212–230. doi:10.1108/13673271111119664
- Alhawari, S. and Al-Jarrah, M. (2012). The Impact of Knowledge Management Processes on the Improvement of Strategic Competence: An Empirical Study in Jordanian Insurance Companies. *International journal of trade, Economics and finance*, 3, (1), 39-45
- Bhatt, Dilip. (2000) 'EFQM Excellence Model and Knowledge Management Implication', <https://pdfs.semanticscholar.org/5586/39e349df5cccf6eaa578775011a061d71bca.pdf>. (Accessed on 29/03/2018).
- Bontis, N, Dragonetti, N, Jacobsen, J and Roos, G. (2003). The Knowledge Toolbox: A Review of the Tools Available To Measure and Manage Intangible Resources, *European Management Journal*, 17, (4): 1- 23.
- Cheng, E. C. K. (2012). Knowledge strategies for enhancing school learning capacity. *International Journal of Education Management*, 26 (6), 557–592.
- Chu, K.W., Wang, M., & Yuen, A.H.K. (2011). Implementing Knowledge Management in School Environment: Teachers' Perception. *Knowledge Management & E-Learning: An International Journal*. 3. (2), 139-152.
- Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organisations manage what they know*. Boston: Harvard Business School Press.
- Davenport, T. H., De Long, D., & Beers, M. (1998). Successful Knowledge Management projects. *Sloan Management Review*, 39 (2), 43–57.
- Feldman, R.S. (1999). *Adjustment Applying Psychology in a Complex World*. New York: McGraw-Hill Book Company.
- Jashapara Ashok, (2011). *Knowledge Management: An Integrated Approach*. (2th Edition). England: Pearson Education Limited.
- Kidwell, J.J., Van der Linde, K.M. and Johnson, S.L. (2001). Applying corporate Knowledge Management practices in higher education. *Educause quarterly* 4: 28-33.
- Koulopoulos, T. M. and Frappaolo, C. (2000). *Smart things to know about Knowledge Management*. Oxford, U K: Capstone Publishing Limited.



- Leung, C. H. (2010). Critical factors of implementing Knowledge Management in school environment: A qualitative study in Hong Kong. *Research Journal of Information Technology*, 2(2), 66–80.
- McNeil, R. (2011). Application of Knowledge Management for sustainable development in institutions of higher education. *Dalhousie journal interdisciplinary* 7(1). [Online]. Available at: <http://ocs.library.dal.ca/ojs/index.php/djim/article/viewFile/2011vol7McNeil/91> [Accessed on 10/09/2011].
- Misra D.C., Hariharan R., Khaneja M. (2003) E-Knowledge Management framework for government organisations, *Information systems management, Information Systems Management*. 20, (2): 38-48.
- Nejati, M., Shahbudin, A.S., Amran, A. (2010). Sustainable development: A competitive advantage or a threat? *Business strategy series* 11(2): 84-89.
- Nonaka, I. (1994) A Dynamic Theory of Organisational Knowledge Creation. *Organisation Science*, 5 (1). 14-37.
- Nonaka, I., & Takeuchi, H. (1995). *The Knowledge-Creating Company*. New York: Oxford University Press.
- Nurluoz, Ö. and Birol, C. (2011). The impact of Knowledge Management and technology: An analysis of administrative behaviours. *The Turkish online journal of educational technology* 10 (1): 202-208.
- Omona, W., Van der Weide, T. and Lubega, J.T. (2010). Using ICT to enhance Knowledge Management in higher education: A conceptual framework and research agenda. *International journal of education and development using information and communication technology (IJEDICT)* 6 (4): 83-101.
- Petrides, L.A. and Nodine, T.R. (2003). Knowledge Management in education: Defining the landscape. [Online]. Available at: <http://iskme.path.net/kmeducation.pdf> [Accessed on 10/09/2011].
- Robbins SP, dan Judge. T.A. (2007). *Perilaku Organisasi (Organisational behavior)*, Jakarta: Salemba Empat.
- Sallis, E. and Jones, G. (2002). *Knowledge Management in education*, London: Kogan page Limited.



- Shaghaei, N., Turgay, T., (2013). Performance Improvement through Knowledge Management and Innovation in Educational Institutions: Teachers' Perception. *GSTF Journal on Business Review (GBR)*. 2, (4): 143-149.
- Shannak, Rifat O., Masa'deh, Ra'ed M., Akour, M A., (2012). Knowledge Management Strategy Building: Literature Review. *European Scientific Journal* 8, (15): 143-168
- Singh, S., Chan, Y. and Mckeen, J. (2006). Knowledge Management Capability and organisational Performance: A Theoretical foundation. *OLKC 2006 Conference at the University of Warwick, Coventry on 20th-22end March, 2006*.
- Stewart, T. A. (1997). *Intellectual capital: the new wealth of the organisation*. London: Nicholas Brealey.
- Subana, M., Sudrajat. (2005), *Dasar-Dasar Penelitian Ilmiah (Basics of Scientific Research)*, Bandung: Pustaka.
- Sugiyono. (2012). *Metode Penelitian Kuantitatif Kualitatif dan R&D (Qualitative Quantitative Research Methods and R & D)*. Bandung: Alfabeta.
- Suryadi and Permana. J., (2017). Peningkatan Kinerja Mengajar Guru Melalui Penerapan Manajemen Pengetahuan dan Pengembangan Kapasitas Guru Madrasah Aliyah Di Kota Bandung [Improving Teacher Teaching Performance Through Application of Knowledge Management and Capacity Building for Teachers of Madrasah Aliyah in Bandung City]. *PEDAGOGIA: Jurnal Ilmu Pendidikan*, 15, (1): 588-599.
- Swan, J., Newell, S., & Robertson, M. (2000). Limits of IT-driven Knowledge Management for interactive innovation processes: Towards a community-based approach. In R. H. Sprague (Ed.), *Proceedings of the 33rd Annual Hawaii International Conference on Systems Sciences, HICSS-33 (84-94)*. Los Alamitos: IEEE Computer Society.
- Wiig, K. (2000). Knowledge Management: An emerging discipline rooted in a long history. In D. Charles & D. Chauvel (Eds.), *Knowledge horizons: the present and the promise of Knowledge Management*. Oxford: Butterworth-Heinemann.
- Wiig, K. M. (2004). *People-focused Knowledge Management: how effective decision making leads to corporate success*. Amsterdam: Elsevier Butterworth Heinemann.
- Zack, M. (1999). Developing a Knowledge Strategy. *California Management Review*. 41 (3): 125-145.