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Facilitation of Teachers' Professional Development through Principals' Instructional Supervision and Teachers' Knowledge-Management Behaviors

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<http://dx.doi.org/10.5772/intechopen.77978>

Abstract

With the rise of global competition and the focus on teacher quality, teacher professional development is becoming increasingly crucial, and the stress and challenges for principals are more severe than ever. Teachers can improve their professional abilities through principals' instructional supervision and their own knowledge-management (KM) behaviors to benefit students. Thus, this chapter analyzes the relationship among principals' instructional supervision, teachers' KM, and teachers' professional development. The author believes that principals' instructional supervision and effective KM can facilitate the professional development of teachers. The author also believes the readers can know the relationships among them, and teachers' professional development can be improved through principal's instructional supervision and teachers' KM behaviors.

Keywords: instructional supervision, knowledge-management behaviors, professional development

1. Introduction

The decreasing number of students and increasing accountability to the public challenge the sustainable development of schools. Schools must provide quality education to attract students and maintain their brand. For sustainable development, leaders are expected to strengthen the professional competency of teachers and staff, formulate strategic plans, and build collaborative relationships with external parties to manage change [1].

Principals, as instructional leaders, are primarily responsible for promoting effective teaching implementation [2]. Effective principals continually engage teachers in instructional dialog and reflective practices to ensure that they are thoroughly equipped to improve student performance. Effective principals are aware of the varied instructional strategies that directly or indirectly improve teachers' professional development [3].

The relationship between a principal's instructional supervision and a teacher's professional development is of interest to the study of teachers' professional development. Research indicates that principals not only play administrative roles but also instruct teachers. In particular, principals inspire teachers to overcome challenges and changes in education. Principals who are school leaders should consider the influence of teachers' instructional behaviors while emphasizing their own roles in instructional supervision. To positively affect teachers' quality, principals must engage teachers in ways that support improved practice and seek to empower teachers as creative and innovative [4].

In the knowledge-society era, knowledge management (KM) has become a primary strategy for improving a school's competitiveness and a reference for teachers' professional knowledge [4, 5]. If teachers can get useful feedback from principals' supervision of their instruction, they can implement KM behaviors into their professional development. Effective organization, storage, sharing, and leveraging of knowledge can propel teachers to become more adaptive, innovative, and intelligent. Research has shown that the sharing of knowledge among teachers can predict teachers' professional development. Principal instructional supervision can directly influence teachers' professional development; knowledge sharing can mediate this effect and indirectly improve teachers' professional development. In other words, if teachers can share their knowledge with other teachers, they can improve their professional development through the process. If teachers properly apply KM and the principal's opinions to their teaching, they can improve their self-understanding and professional abilities [6].

This chapter discusses the principal's use of instructional supervision to improve teachers' professional development. In the process, the author questions whether teachers' KM behaviors facilitate teacher development. Therefore, the author collects related literature and find the connections among these variables. Next, the conceptual framework for studying the effects was drawn to confirm the connections among these variables. Finally, four steps for principal to improve teachers' professional development were concluded. The author believes the readers can know the relationships among them, and teachers' professional development can be improved through principal's instructional supervision and teachers' KM behaviors.

2. Literature review

2.1. Instructional supervision

Instructional supervision is a type of educational supervision. In Taiwan, we recently piloted the principal's classroom walkthrough (CWT) and classroom lesson observation to test the possibilities of the principal's instructional supervision. CWT and classroom observation are

important for curriculum development and instructional supervision. CWT and classroom lesson observation enable quick and systematic collection of information to demonstrate the principal's emphases on curriculum and teaching. The benefits in CWT and classroom observation are: (1) administrators become more familiar with the school's curriculum and teachers' instructional practices; (2) administrators can examine the climate of a school; (3) a team atmosphere develops as teachers and administrators examine instruction and student motivation and achievement; (4) administrators establish themselves as campus leaders and instructional mentors, influencing teaching, learning, and ongoing school renewal; and (5) students see that both administrators and teachers value and observe instruction and learning [6].

These concepts differ from the concept of circumambulating the hall in that the principal or director enters the classroom unannounced to observe teachers' instruction. Each observation is aimed at monitoring a teacher's classroom management and does not exceed 10 min. Although some have argued that CWT is just brief, but frequent, classroom visits, CWT is informal observations that allow principals to gather, analyze, or confirm the teaching messages from many teachers in a short period [7].

Principals' instructional supervision focuses primarily on helping teachers reflect on their actions and promoting school improvement through professional development [8]. Instructional supervision is based on school-based supervision from relevant staff (principals, administrators, teachers, and inspectors) in schools to provide supervision, support, and continuity assessment for teachers' professional development and improvement of the teaching process. Instructional supervision enhances teachers' professional knowledge and promotes the effectiveness of teaching activities [9]. The aims of instructional supervision are as follows: (1) to provide objective feedback to teachers; (2) to diagnose and solve teaching problems; (3) to help teachers develop their strategies and skills; (4) to evaluate teachers for promotions or appointments; and (5) to help teachers maintain a positive attitude [10].

This chapter discusses Glickman, Gordon, and Ross-Gordon's (2001) framework of instructional supervision. They concluded principals' five supervisory tasks are as follows: direct assistance, group development, professional development, curriculum development, and action research. They viewed instructional supervision as enabling teachers to improve students' instruction and improve relationships, meeting both organizational and personal needs. Their findings are comprehensive with respect to the specific instructional tasks that integrate teachers' needs and school goals [11].

Direct assistance is the provision of personal, ongoing contact with an individual teacher to observe and assist in classroom instruction [12]. It is designed to help teachers improve instruction through CWT, classroom lesson observations, and reflective dialog; moreover, it has been shown to be crucial to the development of both teachers and schools [4, 6]. Through formal and informal interaction, principals attempt to improve teachers' instructional practices. The purpose of the process is to help teachers reflect on their instruction for self-improvement [6].

Group development is the gathering of teachers to make decisions on mutual instructional issues. The principal has a decisive influence on the practice of school curriculum and is the leader in instruction. If the principal promotes a positive attitude in teachers, instructional

supervision is more effective. If the principal wants teachers to participate in instructional supervision, they must enable the teachers to have a positive outlook on instructional supervision. The principal should create teaching groups, and let teachers learn together [4, 12]. The purpose of group development, as a dimension of instructional supervision, is to support teachers working cooperatively, rather than alone or competitively [13]. Among other things, group work is designed to develop communication, decision-making, and problem-solving abilities. Recently, teachers' roles have been defined as collegial, collaborative, and oriented toward professional community [12].

Professional development includes the learning opportunities for faculty provided or supported by school members. Professional development is the continuous education of educators to improve the quality of education in a school. Professional development concerns these issues: (1) controversies associated with preservice preparation and the political dynamics of teachers' nascent careers; (2) problems with contrived forms of collegiality, in contrast to effective mentoring and peer coaching in the context of shifting power relationships between principals and teachers; (3) political strategies principals use to empower teachers; and (4) the use of teacher influence to comply with and resist the imposition of administrators' dictates [11, 12].

Curriculum development is the revision and modification of the content, plans, and materials of classroom instruction. Curriculum development is the collective selection by educators of curriculum purpose, content, organization, and format that are appropriate to students' needs. It is supportive of teachers' choices, which improves commitment to curriculum implementation [11]. Principals in Taiwan assist teachers through workshops with curricula to develop instructional competence [4].

Action research is the systematic study of classroom and school activity with the aim of improving teachers' learning. Action research is school/class or individual level instructional improvement whereby educators conduct studies of the results of their activities [11].

Instructional supervision, as a teaching and learning improvement strategy, should be a continuous assessment tool that allows teachers to continually expand their capacity to learn and to help others. A more effective method to promote learning is to help those who work with students to become more knowledgeable, skillful, resourceful, flexible, creative, and sensitive to the needs of students [11]. As stakeholders in curriculum implementation, teachers should be at the forefront in the instructional-supervision planning process from the outset. If teachers view supervision as something done to them and for them but not with them, its potential to improve schools cannot be fully realized. Research also emphasizes the need for teachers to play an active role in instructional supervision. When teachers perceive purpose, control, and personal responsibility, they function more as originators rather than as executors [8]. Instructional supervision should allow competent teachers to explore new methods of improving their professional development and the apprehension of their classes [14].

Supervisors are not the sole contributors to the improvement of education. The principal, for example, is not more expert in teaching methodologies than teachers who know the abilities and inabilities of their own classes and students. Teachers should not be required simply to defer to the supervisor regarding the instructional-supervision process [6].

The instructional-supervision process should include preobservation and postobservation discussions between the supervisor and the supervisee. These can promote teamwork and relationships among staff and management and create an environment of mutual trust, thereby facilitating a frank exchange of ideas between different teaching groups. Such a relationship can provide a relaxed and supportive environment where teachers have freedom of expression to psychologically prepare their students for the presence of a third party (supervisor) in their class.

The key factor to instructional supervision is principal's role. First of all, the author should let teachers understand what is instructional supervision and its relevant meanings. Secondly, principal should establish a friendly working environment and let teachers hold positive and positive attitude to instructional supervision. Finally, set the instructional supervision schedule into school calendar. By doing so, teachers can feel principal's attention. With the purpose of professional development of teachers, even through peer supervision, teachers can be given the responsibility to reduce their stress so as to enable teachers to conduct professional discussions and enhance teachers' teaching effectiveness.

2.2. Knowledge management

KM is a predominant knowledge-based approach in Taiwanese education and considers scientific knowledge as intellectual wealth. Therefore, knowledge accumulation through memorization of theory and facts for reproduction is essential for Taiwanese students. Pedagogical studies emphasize knowledge absorption. KM was introduced in the 1990s after the development of the knowledge economy. It refers to a multidisciplinary approach of achieving a school's objectives through the effective use of knowledge. Researchers have recognized the value of KM in education [5].

The Institute for the Study of Knowledge Management in Education (ISKME) was founded in 2003 in the United States. The ISKME conducts applied research to more effectively understand how educational institutions can create environments and infrastructures that maximize knowledge across all levels of an organization. The ISKME assists schools in improving their use of information technology and in otherwise identifying, distilling, and harnessing information. The ISKME also advises institutional leaders and educational organizations on the development of strategic initiatives, policies, and practices (ISKME-Knowledge Management Web-sites, <http://www.iskme.org/>).

The majority of studies have shown that knowledge can be classified as either tacit or explicit [5]. Tacit knowledge is experience-based knowledge specific to an individual, whereas explicit knowledge is precise, formally articulated, and documented. In organizations, knowledge is often embedded in repositories, documents, routines, operational processes, practices, and norms. The practices of KM are particularly promising and appropriate for elementary schools. The democratization of data and the sharing of information induce people at every level to contribute, participate, interact, grow, and learn while mastering higher-order skill sets. KM can help benchmark progress and constantly improve educational quality. Therefore, KM can benefit schools and teachers.

Because the definition of KM within education varies, the author must distinguish the following concepts: KM as a strategy focused on corporate objectives, such as continuous improved performance [5]; KM as a process of retrieval, sharing, utilization, storage, and generation of knowledge based on the knowledge life cycle [15, 16].

Knowledge retrieval is the collection of knowledge for planning, decision-making, and problem-solving. It involves capturing existing knowledge through its formalized representation and acquiring needed knowledge and information. For teachers, it is the process of accessing knowledge from an external environment [16].

Knowledge sharing is the extent to which people share their knowledge and experience. Knowledge sharing involves the knowledge flow from one community to another and the transmission of organizational knowledge to those who need it [4]. All implicit or explicit teacher knowledge must be circulated and transmitted through relevant pipelines to form a team's working rules; and KM can help with this process. Through the diffusion of knowledge, explicit knowledge stored in the database and tacit knowledge in the minds of the depositors can be shared [5].

Knowledge utilization is the extent to which teachers apply knowledge to make decisions, take informed action, and modify their behaviors to achieve goals or change organizational practices. It is the integration of acquired knowledge into the organization [16].

Knowledge storage is the preservation of knowledge within the school system and those activities that maintain that preservation. It involves the process of document codification for information retrieval and knowledge creation. Acquired and stored knowledge can spread to become common knowledge for school members. KM also solves this problem.

Knowledge generation is the discovery of new knowledge through lessons, creative thinking, research, experimentation, and innovative development. It means that school members organize their knowledge to generate new ideas to be applied specifically to schoolwork or problem-solving.

In schools, KM assists organizations in measuring, storing, and effectively using knowledge. KM increases problem-solving capabilities and the ability to make improvements [5]. The KM approach in schools enables teachers to develop practices to collect and share information to improve teaching and learning outcomes [16].

Through effective instructional supervision, principals can help teachers retrieve, share, utilize, store, and generate knowledge. KM not only provides a platform for teachers to discuss teaching ideas and share educational resources but also stores the expertise of experienced teachers. This increases teachers' effectiveness and professional development, supports the development of a knowledge community in schools, and fosters a culture of learning [5].

KM processes promote mutual understanding among teachers of school practices and the power and accountability hierarchies. Therefore, it creates human, internal, and external capital. In summary, KM processes empower teachers to act and communicate effectively by equipping them with required knowledge [17].

2.3. Professional development

Teacher knowledge contributes substantially to effective teaching and creates more accepting students [18, 19]. Research on teacher expertise underlines the importance of professional development for mastery of tasks typical of the profession [4]. A frequently cited heuristic to classify components of teachers' professional development was provided by Desimone [20]. The classification has greatly influenced the understanding of teachers' professional development.

Professional development is a key to reforms in teaching and learning. Recent research agrees that the following characteristics of professional development are critical to improving teacher effectiveness and increasing student achievement: (1) content focus, (2) active learning, (3) coherence, (4) duration, and (5) collective participation. Studies acknowledge these as critical components of effective professional development [4, 20].

The content focus of teacher development may be the most influential component. Evidence from the past 20 years links activities focused on content to student comprehension of that content. With increases in teacher knowledge and skills come improvements in practice and increases in student achievement. This evidence comes from case studies, national teacher questionnaire analyses, experiments, longitudinal studies of teachers, and experimental designs [4, 20].

Opportunities for teachers to engage in active learning also influence the effectiveness of professional development [4]. Active learning, as opposed to passive learning typically characterized by lectures, can take a number of forms, including teacher observation, followed by interactive feedback; reviewing relevant student work; and leading discussions [18].

Coherence is the extent to which teacher learning is consistent with teachers' knowledge and beliefs. The consistency of school, district, and state policies with what is taught in professional development defines coherence [20].

Research shows that intellectual change necessitates professional-development activities of sufficient duration, including both the time over which the activity is performed (e.g., 1 day or one semester) and the number of hours spent performing the activity each time. Research has not indicated ideal durations but has supported activities that spread over a semester [20].

Another component of development is collective participation. This can be accomplished through cooperation of teachers from the same school, grade, or department. Such arrangements promote interaction and discourse, which can be powerful forms of teacher learning [4].

Teachers' professional development and their teaching effectiveness can be predicted by teachers' KM behaviors [17, 21, 22]. The better teachers' KM is, the better their professional development and teaching effectiveness. Therefore, if teachers' KM behaviors improve, their professional development and effectiveness will also improve. If teachers can continually update their own knowledge through personal and school KM behaviors, they also improve professional quality and ability.

3. Summary

The data from the literature review and teaching experiences in recent years are collected. In summary, there are two central components to the conceptual framework for studying principals’ instructional supervision, teachers’ KM behaviors, and teachers’ professional development [4, 6, 12, 16]. One recognizes a set of critical factors that defines effective instructional supervision, KM behaviors, and professional development. The second establishes an operational path for how principals’ instructional supervision affects teachers’ professional development and KM. It identifies the variables that mediate (explain) the effects of professional development. A basic model, shown in **Figure 1**, is proposed and its use in all empirical causal studies is recommended.

The model represents the relationships among principals’ instructional supervision, teachers’ KM behaviors, and teachers’ professional development. As shown in **Figure 1**, a theory of action for principals’ instructional supervision, teachers’ KM behaviors, and teachers’ professional development would acknowledge these relationships:

- 1. Principals’ instructional supervision can affect teachers’ KM behaviors.
- 2. Principals’ instructional supervision can affect teachers’ professional development.
- 3. Teachers’ KM behaviors can affect their own professional development.
- 4. Teachers use their new knowledge, skills, attitudes, and beliefs to improve their effectiveness.

In **Figure 1**, principals can use direct assistance, group development, professional development, curriculum development, and action research to positively affect teachers’ KM behaviors. For example, if teachers want to share their knowledge with their coworkers, principals can try to promote a positive attitude and develop a friendly atmosphere in teachers. Next, principals should create teaching groups, and let teachers learn together through the interactions. By doing so, teachers are tend to share their knowledge and believe that principals’ instructional supervision can bring benefits to them.

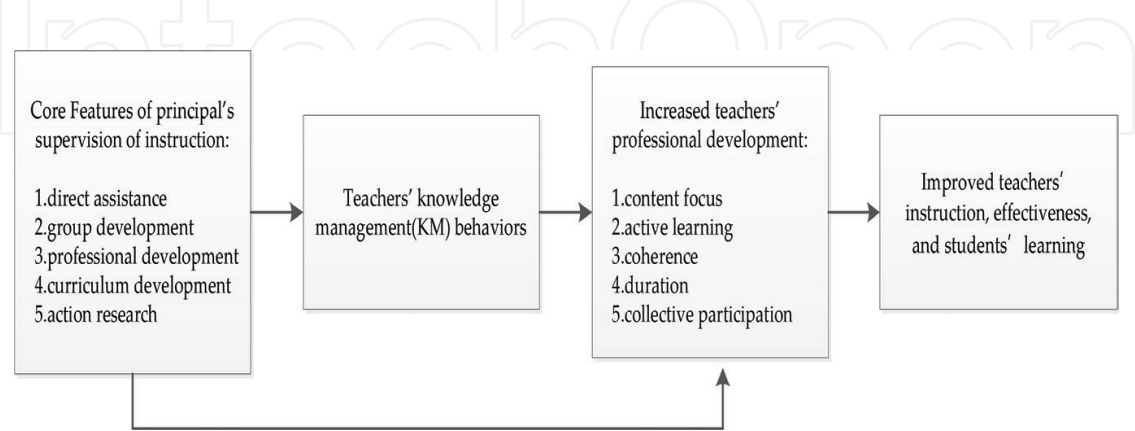


Figure 1. Proposed core conceptual framework for studying the effects among principals’ instructional supervision, teachers’ KM behaviors, and teachers’ professional development.

After that, principals' instructional supervision can affect teachers' professional development. For example, if teachers lack the awareness of content focus, principals should use the direct assistance and curriculum development to make teachers understand the curriculum and strategies in teaching. Principals in Taiwan often assist teachers through workshops to develop instructional competence.

Next, teachers' KM behaviors can positively affect their content focus, active learning, coherence, duration, and collective participation. For example, if teachers have the habits in share their knowledge with each other. The flow in knowledge is frequent. Thus, teachers tend to acquire the knowledge and be an active learner. Teachers generate new knowledge through lessons, creative thinking, research, experimentation, and innovative development. Teachers have positive teacher efficacy and want to improve themselves. If teachers' professional development is increasing, students can get benefits from the process. If teachers' get professional development, their students' grades in examinations will be better than before [4, 23].

This model allows for testing how teachers' can change their own professional development. The model operates with context as a mediator. Each relationship in our path model is reflected in the literature: links among principals, teachers, and students; instruction and student achievement; professional development and teachers' practice; and professional development and student achievement. Although empirical studies including all these elements are rare, the basic components are nearly universal in the theoretical trajectories of teacher learning, but sometimes changing the order to reflect teacher belief changes as a function of improved students' learning [19].

4. Conclusion

Research step 1 proves that "Principals' instructional supervision can positively affect teachers' KM behaviors." Principals use direct assistance, group development, professional development, curriculum development, and action research to affect teachers' KM behavior [4, 5].

Data collection is the basis of instructional supervision. Principals should allow teachers to understand that the classroom observation data and collection of relevant information are crucial means of instructional supervision. These collections serve as a starting point for the teacher's teaching plans. These data can be considered as true, evident, and measurable observations and as a long-term assessment report. By doing so, the principal can offer more general judgments and collect relevant information for teachers' reference and discussion. The principal's sincere attitude and enthusiasm for participation are critical to improving instructional supervision.

This step suggests that the principal should encourage teachers to retrieve documents related to teaching information and knowledge they need by utilizing the school intranet, the Internet, and assistance from colleagues. They can also internalize and apply teaching knowledge to real teaching situations to solve problems and teaching-related issues and provide professional teaching knowledge to coworkers through experience sharing. Currently, teachers

preserve knowledge within the school for retrieval, which demonstrates that teachers do not believe they can create knowledge through sharing; they rather believe they can only retrieve knowledge for use, share it with colleagues upon request, and store it in a repository.

Research step 2 demonstrates that “principal’s instructional supervision can affect teachers’ professional development.” As previously indicated, teachers want to be consulted before CWTs and classroom lesson observations are undertaken. Most principals maintain that instructional supervision is a professional activity that should be left to professional teachers. This argument disqualifies principals from direct classroom supervision because they are managers and not teachers [4, 6].

Contrary to this view, principals have an official role in overseeing the implementation of the broad curriculum in their schools. Some researchers define instructional supervision as an assessment to improve performance [11, 14]. If principals are curriculum overseers who ensure its proper implementation, then they advise teachers. This makes them instructional advisors or supervisors. According to this argument, little difference exists between the principal as a curriculum overseer or leader and as an instructional supervisor. In both roles, the principal can offer advice for improvement; however, in curriculum oversight or leadership, the purpose is less explicit than in instructional supervision.

Research step 3 shows that “teachers’ KM behaviors can affect their professional development.” Other researchers have found that “KM behaviors can positively affect teachers’ professional development.” For example, knowledge retrieval involves the process of capturing existing knowledge from the Internet, school intranet, seminars, and meetings through its formalized representation and acquiring the required knowledge and information. Knowledge sharing involves the knowledge flow from one community to another and the transmission of school knowledge to everyone who needs it.

Teachers often acquire knowledge through oral communication, community study, file archiving, the Internet, and collaborative teaching. Knowledge is extracted and disseminated, appropriately classified, coded, and stored. However, efficiently extracting various teaching methods and techniques and applying them to the teaching processes remains a challenge, which is related to knowledge storage. If the classification, compilation, coding, storage, and archiving of this knowledge are more thorough, teachers can apply the knowledge more effectively. By doing so, teachers implement KM behaviors to aid their professional development.

Both strategies empower teachers to act and communicate effectively by equipping them with the required knowledge. Therefore, these strategies facilitate teachers to work effectively, thus enhancing human capital. This promotes a mutual understanding among teachers of the school practices and power and accountability in hierarchies. Moreover, it creates structural capital and policy capital and enhances the communication among stakeholders, thus building external capital. This suggests that the crucial aspect of KM is to encourage people to share knowledge. Knowledge can be reconstructed through discussion and collaboration, which enhance teachers’ professional knowledge and development. These KM theories confirm that value is created when various types of knowledge are combined to generate new applications [4, 5].

Research step 4 proves that “teachers use their new knowledge, skills, attitudes, and beliefs to improve the content of their instruction and students’ learning.” We know that principal’s instructional supervision can positively affect teachers’ KM behaviors and professional development. Mediated by teachers’ KM behaviors, principal’s instructional supervision can also positively affect teachers’ professional development.

School instructional supervision refers to the interaction between the supervisor and supervisee, with each having a recognized input in the process but within a defined individual role. As such, teaching as a group effort toward a group goal should not be prescriptive for teachers. Goals should be set through discussion among members.

A research view that instructional supervision should be made an integral part of the curriculum to ensure continuous development supports teachers’ demand for a collegial instructional-supervision system [24, 25]. Teachers’ views on instructional supervision may be borne out of the fact that in Taiwan, instructional supervision is poorly structured, with no clear policy related to it. However, the K-12 Education Administration and the Ministry of Education in Taiwan issued guidelines for instructional supervision. First, these intended to strengthen the function of three objectives: (1) implementation of education policies and measures, (2) improvement of teaching quality, and (3) project visitation and assistance in handling major incidents. Second, the responsibilities of staff and the teaching supervisor were explained to help guide teaching, curriculum planning, and teacher counseling. Third, the guidelines intended to take account of the administrative and instructional supervision and assist schools in developing their own characteristics. These guidelines intend to help develop school-based curricula and teaching activities based on the characteristics of schools and adopt appropriate teaching and learning methods to enhance school performance [26].

Principals have been designated as curriculum overseers, and they should undertake instructional supervision. Considering curriculum leadership or oversight to be intricately linked to instructional supervision suggests that principals must also play a role in instructional supervision. This role should be defined and restricted to controlling (because they are accountable for the curriculum), supporting, and facilitating supervisory activities.

Knowledge retrieval, sharing, utilization, storage, and generation are identified in this study to be the KM processes that enhance teachers’ professional development and their teaching effectiveness. A model articulating the predictive relationship among instructional supervision, KM behaviors, and teachers’ professional development was constructed in this study. This chapter contributes to the existing literature by providing an empirical model for the implementation of instructional supervision to enhance KM and teachers’ professional development. These improvements can sustain school development in the wave of quality-assurance policies and marketization in education.

School principals may consider implementing instructional supervision in the school to strengthen teachers’ professional competency, formulate effective policies, and seek external resources for sustainable development. If principals only enact instructional supervision, disregard the importance of KM within the organization, and neglect to allow teachers to use formal and informal channels to circulate ideas among themselves, the effectiveness of instructional supervision will be limited.

Therefore, principals should encourage the retrieval, sharing, utilization, storage, and generation of knowledge in the school through school magazines, class newspapers, and teacher-management concepts. Principals should also encourage a learning community and professional dialog among teachers to activate KM in the organization. They should enable teachers to be more skillful in teaching and implementing their tasks concurrently. In the field of action research, there is a steady stream of innovative ideas. The effectiveness of teacher professional development is effectively enhanced when the team of teachers has been encouraged to be a learning community.

Principals should also foster teachers' concept of KM and the willingness to share knowledge. They should encourage teachers to apply knowledge and innovate knowledge together. These behaviors will help teachers to improve their planning and preparation, teaching skills (techniques and strategies), teaching materials, learning-atmosphere management, teaching achievements, and evaluation. With good KM, appropriate changes and innovations can be implemented in teaching to improve teachers' effectiveness and development in the e-generation learning era.

Besides the abovementioned opinions, due to the research of principal's instructional supervision, teachers' KM, and teachers' professional development is just on the beginning. In the future, the author believes that more relevant mediated variables between principal's instructional supervision and teachers' professional development can be explored. These mediated variables are including organizational structure, organizational culture, organizational citizenship behavior, teachers' flow experience, and so on.

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References

- [1] Chin MC, Chen CC. Examining the relationships among organizational internal marketing, knowledge management, and school effectiveness in elementary schools. *Educational Policy Forum*. 2016;**19**(2):93-124. DOI: 10.3966/156082982016051902004
- [2] Zepeda SJ. *Instructional Supervision: Applying Tools and Concepts*. Eye on Education: Larchmont, NY; 2003
- [3] Glanz J. Action research as instructional supervision: Suggestions for principals. *NASSP Bulletin*. 2005;**89**(643):17-27

- [4] Chen CC, Chen TY. Exploring the relationship among principal's supervision of instruction, teachers' knowledge sharing and teachers' professional development: A test of the mediated-effects model. *Contemporary Educational Research Quarterly*. 2013;**21**(2):69-111. DOI: 10.6151/CERQ.2013.2102.03
- [5] Chen CC, Su CT, Hsieh PJ, Lin CH. An innovative framework applied to elementary schools: A case study of the gaps of knowledge management. *Bulletin of Education Research*. 2009;**55**(2):99-138
- [6] Kuo CY, Chen YN. Principal's role and action framework in instructional supervision. *The Journal of Educational Research*. 2016;**265**:77-90. DOI: 10.3966/168063602016050265006
- [7] Range BG, Finch K, Young S, Hvidston DJ. Teachers' perceptions based on tenure status and gender about principals' supervision [Internet]. 2014. Available from: <http://files.eric.ed.gov/fulltext/EJ1024116.pdf> [Accessed: 2017-12-25]
- [8] Sergiovanni TJ, Starratt RJ. *Supervision: A Redefinition*. New York, NY: McGraw-Hill; 2007
- [9] Tesfaw TA, Hofman RH. Relationship between instructional supervision and professional development. *International Education Journal: Comparative Perspectives*. 2014;**13**(1):82-99
- [10] Jared NB. Influence of Head Teachers' General and Instructional Supervisory Practices on Teachers' Work Performance in Secondary Schools in Entebbe Municipality [Internet]. 2011. Available from: <https://eric.ed.gov/?id=ED527043> [Accessed: 2017-11-25]
- [11] Glickman CD, Gordon SP, Ross-Gordon JM. *Supervision and Instructional Leadership: A Developmental Approach*. 5th ed. Needham Heights, MA: Allyn & Bacon; 2001
- [12] Blase J, Blase J. The micropolitics of instructional supervision: A call for research. *Educational Administration Quarterly*. 2002;**38**(1):6-44
- [13] Johnson DW, Johnson FP. *Joining Together: Group Theory and Group Skills*. 7th ed. Boston: Allyn & Bacon; 2000
- [14] Hoy C, Bayne-Jardine C, Wood M. *Improving Quality in Education*. London, England: Falmer Press; 2000
- [15] Hedlund G. A model of knowledge management and the N-form corporation. *Strategic Management Journal*. 1994;**15**(Summer):73-90
- [16] Girard JP, Girard JL. Defining knowledge management: Toward an applied compendium. *Online Journal of Applied Knowledge Management*. 2015;**3**(1):1-20
- [17] Sun CL. Alternative paths of teacher professional growth: A knowledge management perspective. *Journal of National Taipei Teachers College*. 2003;**16**(1):229-252
- [18] Kostiaainen E, Ukskoski T, Ruohotie-Lyhty M, Kauppinen M, Kainulainen J, Makinen T. Meaningful learning in teacher education. *Teaching and Teacher Education*. 2018;**71**:66-77

- [19] König J, Lammerding S, Nold G, Rohde A, Strauß S, Tachtsoglou S. Teachers' professional knowledge for teaching English as a foreign language: Assessing the outcomes of teacher education. *Journal of Teacher Education*. 2016;**67**(4):320-337. DOI: 10.1177/0022487116644956
- [20] Desimone LM. Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*. 2009;**38**(3):181-199. DOI: 10.3102/0013189X08331140
- [21] Chen PL. A meta-analysis of the relationship between teachers' knowledge management and teaching effectiveness. *Journal of Teacher Education and Professional Development*. 2015;**8**(3):103-130. DOI: 10.3966/207136492015120803005
- [22] Huang CH, Chang YL. A survey study of elementary teachers' school knowledge management and professional growth. *The Journal of Educational Science*. 2014;**13**(1):71-97
- [23] Ting YK. A study of teachers' professional learning communities focusing on students' achievement. *Curriculum & Instruction Quarterly*. 2014;**17**(1):209-232
- [24] Dean J. *Managing the Secondary School*. 2nd ed. London, England: Routledge; 1993
- [25] Stark MD, McGhee MW, Jimerson JB. Reclaiming instructional supervision: Using solution-focused strategies to promote teacher development. *Journal of Research on Leadership Education*. 2016;**12**(3):215-238. DOI: 10.1177/1942775116684895
- [26] Ministry of Education, Taiwan [Internet]. 2013. Available from: <http://www.rootlaw.com.tw/LawArticle.aspx?LawID=A040080081012000-1021001> [Accessed: 2016-11-20]