SERD | Reflective models in teacher supervision introduced by Education 4.0: The teacher in the mirror

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Abstract

The dynamic changes in the world have led to transformation from agricultural society to industrial society introducing more advancement in information technology and innovation called as the Economy 4.0 era. Therefore, it is essential for the teachers to keep pace with changes in order to be competitive and this is a new challenge to redefine the new Education 4.0, to determine the creative and innovative teachers. It is also a challenge for the learner to seek the learning outcome with regard to the learning management by the teacher. Questioning the current supervision system of Turkey, this paper discusses innovative reflective models in teacher supervision posed by Education 4.0 and their utilization within the educational contexts. Inadequate number of supervisors and demands on supervisors posed by the current learner-based innovations both in and out of educational contexts have directed many to doubt about the quality of the supervision, actual time spent for the development of teachers and collaboration for better teaching and better learning. Reflection gives teachers a chance to self-evaluate their teaching practices. Teachers grow professionally if they rethink on their actual teaching practices together with the prospective improvements. The essential goal of reflective teacher supervision is to create an environment for teacher inquiry, a teacher-administrator-driven form of professional growth. With its reconfigured supervision roles and relationship, it mainly reconceptualizes the meaning of supervision, in which schools can try to challenge an embedded traditional 'top-down,' hierarchical paradigm, with the teachers themselves at the bottom as passive recipients of training. This paper also includes a description of how reflective models go about helping teachers use their own thought process to develop both learning and teaching. It also describes the processes of individual reflective practices like teacher portfolios, journals; partner reflective practices including peer coaching, cognitive coaching; small group reflective practices such as action research, study groups, and school-based practices like classroom walk-throughs and instructional rounds. Finally, it concludes with how reflective practices and professional learning communities according to Education 4.0 are promoted.

Keywords: Reflective supervision, education 4.0, teacher development, action research, coaching.

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Introduction

The dynamic changes in the world have led to transformation from agricultural society to industrial society introducing more advancement in information technology and innovation called as the Economy 4.0 era. Based on the recent learner-based innovations both in and out of educational contexts, this era brings new responsibilities for both the learners and teachers for the sake of keeping pace with changes in order to be innovative and competitive. This is a new challenge to redefine the new Education 4.0, to identify the intelligent people, who are creative and innovative. It is a challenge for the learner to seek the learning outcome with regard to the learning management by the teacher, which brings the teacher in the mirror.

With the introduction of Education 4.0, educational administrators have witnessed a high level pressure to help teachers grow professionally, create effective schools, and have a higher level of student success. Recent research revealed that critical reflection is essential both for school change and development of teachers. However, not many research studies examined the impact of reflective models in teacher supervision introduced by Education 4. In this study, this perspective was explored and innovative reflective models in teacher supervision posed by Education 4.0 and their utilization within the educational contexts were discussed.

Through the Economy 4.0, there has been the wide array of information and communication technology, which play an important role in daily life style, and creating digital society. The new pace of virtual world creates changes in the lifestyle of people irrespective of distance, time and places. It connects everyone globally with wider vision and keeps updating faster. People must live together among the new social media environment, and it is essential to be aware and knowledgeable about the social media. Besides this, the work and structure of the organization would also change. Life would be more attached to the machinery with more advancement in its functions and programs. All those involved will have a high life expectancy (Pooworawan, 2015).

Economy 4.0 has led us in an era of unprecedented change. The acceleration of change has phenomenally increased in this period. The different conditions of social economy in the respective era urged for unique and respective skilled set of human capital. The importance of development of the required skills lies on individuals in learning management, to develop the

skills together with knowledge abilities relating to the matter considering the need of the society (Sinlarat, 2016). Leapfrog (Harkins, 2008) named the education in the era responding to the agrarian society as Education 1.0, industrial society as Education 2.0, globalization as Education 3.0, innovation as Education 4.0.

Education 4.0 and Reflection

Upon studying the details in education of the respective era, it is found that there are diverse inputs from various studies (Koantakool, 2016; Jeschke, 2014; Sinlarat, 2016). Education 1.0 responded to the need of the agricultural society. The knowledge is transferred from teachers to learners using the concepts and allowing the learner to follow the teacher who focused on explanation as the main method. Education 2.0 responded to the requirement of the industrial society with the concept of teaching to learn rather not much of being creative. The learning management focused on learning the technology is to use as tools in the work.

Education 3.0 addressed the need of the 'technology society'. It creates knowledge by supporting self learning. Education in this era uses learning technology in forms of teaching materials, digital media and social media. It focuses on interactive learning. Leapfrog (Arthur M. Harkins, 2008) stated that this learning management empowers students to generate knowledge, not merely to consume.

Education 4.0 is catering to the need of the society in 'innovative era'. It is in accordance to the changing behavior with the special characteristics of parallelism, connectivism (Goldie, 2016), and visualization. This learning management must help to develop the learner's ability to apply the new technology, which will help the learner's to develop according to the changes in society. Sinlarat (2016) stated that the learning management of this era is a new learning system, allowing the learner to grow with knowledge and skills for the whole life, not just to know how to read and write. To be able to live in a society and to be equipped with the best of his/her ability. Therefore, Education 4.0 will be more than just an education. Hence, learning management must respond to the changes in social and economy environment to cater the human capital need. To do this, there must be a change in learning

management, which requires reflection, which is a great chance for teachers to self-evaluate their teaching practices. Teachers grow professionally if they care about their own teaching and prospective developments in this respect. With its reconfigured reflective supervision roles and relationship, it mainly reconceptualizes the meaning of supervision, in which schools could focus on challenging a conservative 'top-down,' hierarchical paradigm, with the teachers at the bottom as passive recipients of training.

Within the context given above, reflection could be seen as a means to change and there are optional methods to do that (Fullan, 2005). Some research studies indicated that it is just by means of reflective practice that the teacher improve professionally (York-Barr, Sommers, Ghere, & Montie, 2001). Schon (1987) described reflective practice as a critical process in refining one's craft and artistry in a specific discipline. To put another way, it implies seeing one's experiences in practice while he or she is being coached by others. According to Smyth (1989), four serial stages are related with questions leading teachers to critical reflection:

1. Informing- What is the meaning of this?

2. Describing- What do I do?

3. Constructing- In what other ways could I do it?

4. Confronting- How did I come to be like this?

According to some researchers (Cooper & Boyd, 1998; York-Barr et al., 2001) critical reflection can also be see by means of these types: reflection for individuals, with partners, and in large and small groups.

Reflective models in teacher supervision

Glickman, known as one of the pioneers in supervision studies, (1981) maintained supervision processes should be conducted in a developing way including interaction with others more effectively. However, there may not be a single way to do it. He underlined three different orientations to supervision focusing on the intentional behaviors of clarifying, listening,

presenting, encouraging, problem solving, demonstrating, negotiating, standardizing, directing, and reinforcing (pp. 17-37): 1. Directive orientation; 2. Collaborative orientation; 3. Nondirective orientation.

Although different approaches to each type of reflective practice are available, in our study, our focus will be on teacher portfolios and journals for individual reflective practices; action research and study groups for reflective practice of small groups; peer and cognitive coaching partner reflections, instructional rounds, and classroom walk-throughs for school-based reflective practice.

Reflective Practices for Individuals

Journals

Using reflective journals to establish critical environments, Göker (2016) maintains that the teacher could provide other teachers with an opportunity to reflect on their current practice considering other alternative approaches and develop reflective leadership as journal writing is commonly utilized in many educational settings. Teachers, in a reflective journal, basically express their ideas, feelings and reflections based on their own teaching practice. They can also do it orally. For example, based on their observation of what is happening in the classroom, they keep notes in either dialogue journals, learning logs, personal narratives or diaries, which include different reflections providing them with a critical analysis of what they actually do in class and help them realize other optional steps to grow their own practice.

To put another way, almost all journal writing activities require practice using reflective and experiential learning cycle. Free stream-of-consciousness writing or a structured analysis of critical events constitute the structure and format of reflective journals and the main aim here is to develop self-awareness and have a better concept comprehension (Cunliffe, 2004; Varner & Peck, 2003; Ramsey & Fitzgibbons, 2005). Diaries and dialogue journals are known to be the most popular ones among the journals. One good example for reflective journals is that of Hatton and Smith (Hatton & Smith, 1995). 60 teacher education students from the Sydney

University were included in the research study on the use of reflective journals (1991 and 1992 cohorts). The impact of strategies and tasks structured students were exposed to in the teacher education program was the main focus in the study. But it is not easy to say that there is much scholar work on the task of writing journal giving emphasis on positive effects of considerable potential for teacher development. The clear reason for this is that critical analysis of teaching is a very difficult process for the prospective teachers as they have almost no experience in the classroom.

Reflection itself produces rumination of intellect happening when one takes a step back to create connections to what was not seen earlier (Rainer, 1978). Approached from this angle, writing journals is a reflective means to link teaching and development of teaching (Holly, 1989). This type of method makes reflection a deliberative process as the teacher must consider writing and analyzing for practice later. So, it is known as reflection-on-action, because the reflecting process happens after the phase of teaching. After analyzing and interpreting the writings, themes and patterns come out together with further planning.

Teacher Portfolios

Teacher portfolios became popular after the National Board for Professional Teaching Standards (NBPTS) formed a professional model for teachers, which seeks national certification (Bullock & Hawk, 2005). In these terms, rigorous standards were formed for experienced teachers, who wish to get the highest honor in profession of teaching (National Board for Professional Teaching Standards, 2009). Before that, they were commonly employed in the other jobs together with prospective teachers at the universities (Arter & Spandel, 1992). According to Tucker, Stronge, and Gareis (2002), teacher portfolios were described as, "a structured collection of selected artifacts that demonstrate a teacher"s competence and growth" (p. 3). Some documents like student work samples, lesson plans, teaching philosophy, achievements, etc., reflecting their skills and beliefs were gathered by teachers (Bullock & Hawk, 2005).

From this stand point of view, the gathering process of the documents is reflective in nature (York-Barr et al., 2001). Bullock and Hawk (2005) further maintain that reflection is considered to be a critical component in developing the portfolios. As discussed earlier, reflective process gives the teacher a possibility to self-evaluate their own teaching practice (Tucker, Stronge, & Gareis, 2002). Only if teachers consider their own teaching and prospective improvements, can they grow in a professional manner. During a course of the time, they can notice their development by means of using the portfolios (York-Barr et al., 2001). Seen in this light, teacher portfolios serve two different forms of reflective theory Schon (1983) espoused. On the whole, choosing which artifacts to put in the portfolios is considered to be an example of reflection-in-action while the written components are seen as an example of reflection-on-action.

Reflective Practices utilized by Partners

Cognitive Coaching

Cognitive Coaching employs the notion of teacher efficacy and self-efficacy conceptualised by Bandura (1986, 1997) as an instrumental element, which hones in on the initial purpose of Cognitive Coaching, to increase one's capacity to develop self-directedness, self-monitoring, and self-modification abilities. Bandura (2006a) maintained that people can (a) exercise some influence over their actions and (b) are self-reflecting, self-organizing, and proactive. The belief in personal competency is of paramount importance in a person's behavior and outlines "how" s/he is going to join those experiences.

Cognitive coaching model was defined by Costa and Garmston (2002) as a non-judgmental reflection informed by recent scholar work about brain and constructivist learning theory. Cognitive coaching is essentially considered to be a set of strategies created to support interactive dialogues on reflecting, planning, and problem solving. The coaching was organized by Costa and Garmston (1994) to achieve the aims, which are mutual learning, trust, and growth toward holonomy. Holonomy was described by them as, "When a teacher has the ability to both self-regulate and be regulated by the shared norms and values of the

school" (Costa & Garmston, 1994, p. 3). This type of coaching operates in three different phases (Costa & Garmston, 1994, pp. 18-22).

1. Planning: Following the establishment of of trust between teachers and coaches, observation aims are discussed by the teacher, which include both behaviors of them and those of learners. Then a detailed plan of the lesson is given by him or her to be able to purify the lesson and the teacher and the coach agree on the issues of the reflective conference including data collection methods.

2. Teaching: During this phase, the coach carries out observation collecting data.

3. Reflective Conference: Teachers and coaches come together and negotiate the issues. This phase is considered to be a great opportunity for the teacher to reflect and analyze the lesson. This is also an opportunity for the coach to evaluate the data collected and organize discussions on the issues observed. The teacher also has the opportunity to share his or her impressions regarding the lesson, actual behaviors and established goals are discussed so that the teacher could think about his or her future practices including his or her new discoveries. The reflective conference, seen in this light, can be seen as a type of reflection-on-action as a specific time is spent on what is actually happening in the class. By doing so, both the teacher and the coach get an opportunity to evaluate the data collected and compare actual behaviors and established goals to create a better learning environment.

Peer Coaching

Peer coaching is a clinical process, in which teams of teachers or the would-be teachers regularly monitor themselves in order to refine teaching practices, encourage reflective practice providing assistance, suggestions, and support (Göker, 2006b; Joyce & Showers 1996, Thorn, McLeod, & Goldsmith, 2007). It is also regarded as a means for the experienced teachers to make use of the skills they learned during in-service training. Research also indicated wide support for the utilization of peer coaching programs to enable transfer of training to classroom practice, promoting collegiality through peers' exchange of feedback, as

well as the development of reflective teachers (Göker, 2006b; Thorn, McLeod, & Goldsmith, 2007).

During the peer coaching process, is is essential to establish a relationship based on openness and trust and each teacher should have an opportunity to act as a coach considering his or her field expertise. Firstly coaching benefits and expectations are discussed between the participants before a pre-conference, in which lessons are planned and a focus for the monitoring process is established. The coach conducts a lesson and observation is carried out based on the target area defined during the pre-conference. During observation, notes are taken in checklist or narrative agreed on is used. When observation is finished, the observing teacher and the coach are engaged in self-reflection. During this stage, considering the lesson, the coach develops certain questions to be discussed during the post-conference. The observing teacher is expected to review the notes and draws conclusions. Required skills to transfer are; strategy, time to practice, and feedback. Responsibilities look to be different in peer and cognitive coaching. For the former, Coaches model the practice desired and they encourage the desired behavior from the sidelines for the latter. However, the reflective practices of the teacher and the coach both in peer and cognitive coaching process constitute a type of reflection-on-action.

Reflective Practices for Small Groups

Study Groups

Since colonial times these types of groups have been used as a means of analysing many types of practices. The first of these groups has been documented in the USA as Benjamin Franklin (Makibbin & Spraque, 1991). At that time, the main goal was to analyze effective practices of business. Later, during the 1980s, they were utilized for the professional development of teachers (Little, 1981; Stigler & Hiebert, 1999) as they are believed to serve the quality of teaching by means of professional reading, dialogue (Cooper & Boyd, 1998; York-Barr et al., 2001), and observation. These types of groups usually work with 5-10 teachers meeting to discuss on a shared topic and they examine issues of curriculum, instruction, and evaluations

to review their experience and knowledge apply them into their practice. Classroom observations are essential components for some of these groups. They come together for planning, observing, and providing feedback on the observation issues targeted before.

This type of reflective practice is also known as both reflection-for-action and reflection-on-action since they put their expertise into practice. We call this process as reflection-for-action because this process is implemented at the time when teachers discuss, research, and apply new methods and strategies to promote their professional development together with expected good learning outcomes. We also call this process as reflection-on action because it happens right after the use of new strategies at the time when teachers contemplate with their peers on both behaviors of students and the lesson itself.

Action Research

Action research is a concept used in educational contexts used since the beginning of 1940s with the introduction of Kurt Lewin's work (Ferrance, 2000; McFarland & Stansell, 1993). Stephen Corey became the pioneer to use it in educational settings (Corey, 1953). According to Corey, to be able to integrate research with practice, action research had to be used. Up until 1970s, it was not deemed as important. But, at the beginning of the 1970s, it became popular again and it was utilized as an essential means for professional development of teachers. Within this framework, Ferrance (2000, p. 1) describes it as, "A process in which participants examine their own educational practice systematically and carefully, using the techniques of research." Later this process included some other forms as individual action with both personal and collaborative reflection (Cooper & Boyd, 1998). In the process of action research, to be able to guide the process, six types of routines are formulated: identifying a problematic field, gathering and interpreting relevant data, acting on data collected, evaluating it, and reflecting (Ferrance, 2000, pp. 9-13).

Action research is believed to establish a frame of mind used in school improvement. It also supports problem-solving as well as instructional decision-making process for instruction, encourages self-evaluation together with reflection creating an ideal school climate, and helps

teachers grow professionally. It is also considered to be a type of reflection-for-action since a teacher uses past experiences together with data collected to be able to explore positive teacher behaviors in achieving positive learning outcomes.

School-based Reflective Practices

Classroom Walk-Throughs

Classroom walk-through is not a new supervisory action and it was introduced in educational settings in the 1990s (Downey, English, Frase, Poston, & Steffy, 2004; Fink & Resnick, 2001). It basically utilizes classroom walk-through observations in which, supervisors visit classrooms for the sake of observing teaching practices and assessing learning outcomes. It is conducted through professional dialogues between the teacher and supervisors based on what is actually happening in the classrooms   (Downey et al., 2004). According to Fink and Resnick (2001), the main components in such observations consist of dialogue, focus, and brevity. Lasting about three minutes, student orientations to the task, issues on curriculum objectives, decision points on teaching, students' products, and issues of health and safety are observed and discussed. They later end up with follow-up dialogues conducted in reflective in nature. This type of approach focuses on moving teachers to a certain level of reflection and collaboration to teaching practices. That is why, it is also considered to be a type of reflection-on-action.

Instructional Rounds

Instructional rounds were currently introduced by City, Elmore, Fiarman, and Teitel (2009) adapting and extending on health practices. They are conducted among the physicians in order to progress in their knowledge of practice by means of observing, analyzing, and discussing with other physicians. Leaders in educational settings employ a similar method for the sake of creating an environment, in which problems are solved and teaching practice is developed. School principals and supervisors are given responsibility to improve instruction together

with the teachers. Four different steps are carried out in this process, which consist of identifying a problem, observing, debriefing, and taking corrective steps (City et al., 2009). The ultimate goal in this process is to form a common culture via using a common language among participants. From this stand point of view, cultural transformation is achieved to have a better understanding of good teaching practice. Seen in this light, they are also regarded as a type of reflection-for action as they aim to improve teaching practices as a system and gain desired outcomes.

How to Promote Reflective Practices and Develop Professional Learning Communities

Creating a reflective learning community is essential in implementing reflective practices. That is way, these reflective practices are seen as a means for managers to encourage reflection into the reflective learning community. Only when educational leaders promote a reflective learning community, which highly values effective dialogues and communication through active participation, can reflective practices work (Göker, 2016). To achieve this, educational leaders should be familiar with adult learning theories. Research studies (Göker, 2016; Merriam, 1993) have indicated that adults are supposed to get the wish and motivation to learn new skills together with new experience to develop professionally. In other words, they should be willing to acquire the new skills and actively participate in forming reflective groups. In a sense then, reflective learning community must be established based on mutual trust and respect among all participants to help them make receptive communication excluding the concepts of sarcasm and put-downs. They should also be sensitive not to be judgmental when they come together and share their own experiences, behaviors and practices of teaching. To a certain extent, they should realize the fact that their values and beliefs, past experiences as well as their current practice, form their opinions and have a high level of impact on their future behaviors.

It is clear that when participants create a professional and reflective learning community, then learning becomes self-directed and they definitely become empowered. This type of community creates behavioral change in reflective practices and it promotes professional development and experience. Professional development mostly occurs when participants are

willing to develop new theories of action and ideas and they then continue their willingness to change and shape new behaviors.

One cannot deny the true relationship between organizational learning and personal learning. This leads to professional development naturally and it helps the organization develop as a whole. Dialogues, a common understanding on individual concerns and among participants will help the organization achieve and realize its aims. Ultimately, shared vision and team learning will create a reflective and professional learning community, in which members will form free dialogues and create new viewpoints excluding individual justifications and views. Autonomous members in the organization will make sound decisions considering the better opinions and promoting evidence in hand.

Conclusion

As discussed throughout the paper, nowadays it is the digital society, in which the life style has changed, learning management should respond to the changing behavior of the learner and the teacher. In other words, to be able to redefine the education in order to respond to the innovative society or Education 4.0, educational leaders must see the learning management in the aspect of Social & Virtual Learning; that the graduates will become intellectuals and eventually that would help to build an intelligent nation. The appropriate model of learning management stated above is still a challenge of learner's and teacher's ability to seek further. Transformation from agricultural society to industrial society has introduced more advancement in information technology and innovation called as the Economy 4.0 era. So, it is of paramount importance for both the learner and the teacher to follow changes in order to be competitive and this is a new challenge to redefine the new Education 4.0, to determine the creative and innovative teachers. It is also a challenge for the learner to seek the learning outcome with regard to the learning management by the teacher. Current learner-based innovations have directed educational leaders to rethink about the reforming quality of the supervision for better teaching and better learning considering creation of reflective learning communities where members could be innovative and reflective. For such a new formulation, reflection becomes essential to provide the teacher with an opportunity to self-assess his or

her own teaching. With its reconfigured reflective supervisory practices, this paper has outlined a brief description of how reflective models go about helping teachers use their own thought process to develop learning and teaching. It also described reflective practice processes for individuals like teacher portfolios, journals, reflective practices utilized with partners including cognitive coaching, peer coaching; reflective practices for small groups such as action research and study groups, and school-based practices like classroom walk-throughs and instructional rounds. Finally it concluded with how reflective practices and professional learning communities according to Education 4.0 could be promoted.

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