

CHANGES IN COGNITIVE PROCESSES

ZULFAKAR

ABSTRACT

When there is a gap between what one expects and what one experiences, it leads individuals or groups to ask what is going on and what they should do next. Studies of sense-making in organizations have found that an environmental crisis presents challenges to organizational routines as it disrupts the existing understanding and requires an urgent search for explanations as well as appropriate action. When identity is under threat, people are triggered to engage in sense-making around the sources of threat, acting so as to restore their identity. In sum, sense-making may be understood as an important way of trying to regain control when people feel most deeply threatened. Cognitively demanding, sense-making itself threatens a person's identity and has social costs, as it requires public admission of uncertainty. It appears, therefore, that some emotional reactions to a potential sense-making trigger are likely to signal the need for sense-making and energize the process more than others.

Keywords: changes, cognitive processes

INTRODUCTION

Making sense of things involves constructing a reality by creating meaning from prior knowledge, experiences, values and beliefs (Coburn, 2001; Spillane and Anderson, 2014; Weick, 1995). Using sense-making approach in educational leadership context suggests that school leaders make and enact their meaning of reform demands based on preexisting understandings and overlapping social contexts inside and outside of school (for example, policymakers, district, local council, teachers, parents, and students). This internal process through which leaders respond to reform, involves interplay between personal values and school culture. In other words, school leaders' sense-making process is influenced not only by their set of values but also by colleagues' values, school norms and traditions. As such, school leaders' sense-making is nested in multiple and often conflicting school contexts. This two-way interaction in which school leaders' sense-making shapes and is shaped by school culture can either reinforce existing practices or facilitate an educational change (Coburn, 2005; Schein, 2009). The following analysis of school leaders' sense-making provides a useful insight into the ways by which leaders as well as all those within the school culture negotiate, mediate, and contribute to reform mandates in their local contexts (Koyama, 2014). Little inquiry has been conducted with regard to school leaders' experiences with and responses to reforms. In particular, while studies have addressed the role of leaders in influencing teachers' sense-making (Coburn, 2005), only limited research has examined the sense-making of principals and middle leaders (Gawlik, 2015; Jennings, 2010; Rigby, 2015; Spillane and Anderson, 2014). This literature review article aims to explore through a holistic approach the concept of sense-making, that is, the process by which school leaders, personally and collectively, come to make sense of the multiple demands they confront within education reforms. The article then proceeds to discuss how sense-making is framed in empirical studies, and suggests implications and possible future research.

◆ Educational Administration Program, Faculty of Education Science, IKIP/UNDIKMA Mataram Lombok, West Nusa Tenggara, Indonesia. e-mail: zulfakar07@gmail.com

Since school leadership is distributed among formal and informal leaders (Spillane et al., 2001), not only school principals but also middle leaders' role is more complex. Middle leaders are faced with an increasingly challenging, fast-paced and demanding educational environment while adapting external reform demands to school context (Cordeiro and Cunningham, 2012). School middle leaders are those teachers who have management responsibility, below that of the senior management team, for staff or for an aspect of the school's work. While the senior team shapes the school's ethos, sets policy and establishes guidelines, the middle leaders, who constitute an intermediate layer of management, are responsible for implementing the decisions and making them a reality (Dean, 2003; Fleming and Amesbury, 2012). Tightening their role with strict direct accountability puts growing pressures on school leaders as they find themselves burdened with new responsibilities. More specifically, they are required to translate reform demands into school practices. This intersection of internal school goals and external demands is a central concern for school leaders, as it questions common practices and challenges the status quo (Kaniuka, 2012; Knapp and Feldman, 2012). Challenges to the status quo require that school leaders make sense of their leadership role in response to the dynamic interactions between internal goals and needs, and external reform demands (Saltrick, 2010). This new leadership challenge positions school leaders at the very center of education reforms (Gawlik, 2015; Volante, 2012), which calls for a much needed analysis of school leaders' internal processes, focusing on their practices and actions in the process of adapting reform demands

to their school environment (Brezicha et al., 2015; Clifford et al. 2012). Effective results of education reforms depend on their successful realization by formal leaders leading the reform in their schools (Black and Shircliffe, 2013; Flessa, 2012; MacDonald, 2014; OECD, 2015; Schleicher, 2012; Young and Lewis, 2015).

Over the past two decades, the urgent need for effective education reform has occupied governments worldwide (for example, 'No Child Left Behind' and 'Race to the Top' in the USA, 'Investing in the Future' in Germany, 'Students First' in Australia, 'Dignified Schools' in Mexico, 'A Denmark that Stands Together' in Denmark, 'Pupil Premium' in England, 'Oz Le'tmura' and 'New Horizon' in Israel). Targeting at improving student outcomes, educational reforms across OECD countries focus on closing the gap between high and low performers in their education systems (Organisation for Economic Co-operation and Development, 2015). The increasing demand for school improvement involves all those within the school community including policy-makers, politicians, school principals, middle leaders, teachers, parents and students. Facing an ever-increasing pressure to transfer school systems into dynamic learning environments, school leaders find their role increasingly more complex (Fullan, 2014). Sense-making is an ongoing process through which people work to understand issues or events that create ambiguities in routine (Maitlis and Christianson, 2014). It is an active process of constructing meaning from present stimuli, mediated by prior knowledge, experiences, beliefs and values that is embedded in the social context within which people work. When individuals encounter

moments of uncertainty, they frame their environment through an interpretive mental model in order to 'make sense' of what has occurred. Sense-making is a useful theoretical construct as it invites individuals to understand how and why people arrive at their outcome (Smerek, 2011; Sumbera et al., 2014; Weick et al., 2005). Sense-making aims to create a holistic picture of the ambiguous event through three interrelated processes: creation, interpretation and enactment (Weick, 1995). First, individuals explore the wider system by collecting different data sources in order to create a mental map of the unfamiliar situation. Thus, sense-making utilizes mapping as a useful tool for people threatened by confusion. Maps explain, energize and invite people to discuss and contribute ideas in order to achieve a better understanding of the situation, so that their actions would become more effective. And yet, there can be various 'right' maps for different people. The creation process suggests bracketing, noticing and extracting cues from lived experience of the ambiguous event. Second, through multiple interpretations of the ambiguous event, individuals develop the initial sense they created into a more organized one. In doing so, the variety of perspectives reveal what is really going on, and keep prior biases from interfering with their perceptions. Finally, the enactment process invites individuals to translate their knowledge into actions. Thus people incorporate new information and eventually take action based on the interpretation they have created.

FROM A COGNITIVE PROCESS TOWARD A HOLISTIC APPROACH

Sense-making theory as framed by Weick (1995) describes a cognitive process that unfolds in a three-step sequence: (1) the act of noticing something – an event – which stands out from the flow of everyday inputs and a retrospective viewing of that event in the context of lapsed experience, (2) the attempt to formulate an explanation for, or interpret the event, (3) the articulation of that explanation to promote others toward understanding and action. Structuring the unknown through sense-making enables individuals to act in ways that make sense. It involves coming up with a map of a shifting world as well as testing this map with others through data collection, conversation, and action. Individuals, then, actively construct meaning by relating new information to preexisting cognitive frameworks labeled by scholars as working knowledge, cognitive frames, enactments or cognitive maps. Thus, people enact and then make sense of their environment by retrospectively turning their lived experiences into cognitive maps. This action-oriented thought process suggests that cognition and action are both integral parts of sense-making. By placing new information into cognitive frameworks, individuals

not only develop a sense of what is going on, but also develop a sense of how to engage in the situation.

By adopting a process-oriented language, Weick (2012) has further developed the cognitive approach to a social constructivist perspective (Maitlis and Christianson, 2014). Sense-making is seen as a constructive practice, since people whose identity has been threatened engage in a social sense-making process. It seems that sense-making has been explored through both cognitivist and constructivist versions. In its cognitivist version, sense-making is an ongoing developmental process within individuals' minds, whereas in its constructivist version, sense-making is referred to as a collective process that occurs in social interaction and negotiation through the use of language (Coburn, 2005). In sum, it seems that scholars locate sense-making in different places. Some regard it as a cognitive process that takes place in individuals' heads, while others perceive it as a shared process of social construction which is carried out through interaction between people. Thus, sense-making occurs not only within individuals but also between individuals. In this context, collective sense-making is viewed as a mutual process in which members engage with an issue and build their understanding of it together. Sense-making is concerned with the construction of new meanings that

strengthen new ways of organizing and understanding. These are produced when individuals engage with others while struggling with complex problems (Gawlik, 2015).

We can say then, that sense-making starts with the question 'how do we define who "I" and "We" are?' both in the context of 'I' as an individual, as a school leader, and of 'We' as a community. Constructing a holistic picture of sense-making requires a focus on a micro level as well as on a macro level. At the micro level, we explore how individuals make sense of a certain event while at the macro level we investigate the social

SCHOOL LEADERSHIP

As a key element of leadership, enables all formal leaders, principals and middle leaders, to transform schools into effective educational environments (Brown et al., 2000; Fleming and Amesbury, 2012; Fullan, 2014; Scott and Scott, 2013). Weick and Sutcliffe (2007) argue that school leaders' key task is to ensure that everyone within the school culture can make sense of what they are doing, why, to what ends, and how. Namely, sense-making is a key leadership capability for the dynamic world we live in today, as it allows school leaders a better grasp of what is going on in their environments (Brezicha et al., 2015). Nevertheless, we know little about the sense-making process of school leaders and their role in influencing teachers' sense-making (Black and Shircliffe, 2013; Jennings, 2010; Spillane and Anderson, 2014). Sense-making in school leadership is about giving a meaning to unclear experiences while dealing with ambiguity. This idea suggests an understanding of both school leaders' increasingly complex world and the complexity of the sense-making process itself (Beabout, 2012). Obviously, school leaders struggle with the interplay between action and interpretation (Liu and Maitlis, 2014; Zulfakar and Fahrudin, 2018). Seeking to address this complexity, they shift from management by command and control to management by collaboration and teamwork. For this to occur, formal leaders leading effectively in a complex and dynamic environment are required to understand and respect how all those within the school culture make sense of their work.

In addition to sense-making, there are related terms that describe the processes by which school leaders interpret and translate education reforms into school practices. A deliberative process suggests negotiation of meaning through an interpretive schema within which new decisions and actions can be made (Fiol and Lyles, 1985). Similarly, De Certeau and Rendall's (1984) concept of 'making do' offers insight into how school leaders negotiate various demands in their everyday lives so as to balance between private and institutional roles (Black and Shircliffe, 2013). In particular, De Certeau (1984: xiv) calls this way of making do, 'procedure of everyday creativity'. In a similar

context in which the sense-making process is being nested in. Nevertheless, although they are separated here for analytical purposes, in reality both micro and macro levels of sense-making processes regularly interact as people interpret interactions and situations. In today's ever changing reality it is the role of the school community (school leaders and the educational staff) to navigate complexity and uncertainty through sense-making processes.

fashion, 'making do' can be seen as bricolage, a process by which individuals produce their own inventive activities from the practices that structure everyday activity in response to changing realities. As bricoleurs, school leaders rely on previous tools and materials from their work experience with past policies and apply them to new contexts. Through an interaction with what they know and new demands, they create their own interpretations of reform demands (Koyama, 2014). Finally, 'policy enactment' is another related term that describes educational reform as a process that is open to different interpretations, thus enacted in creative ways in schools. More specifically, policy enactment conveys 'the creative processes of interpretation, that is, the recontextualization through reading, writing, and talking of the abstractions of policy ideas into contextualized practices' (Braun et al., 2010: 586). This highlights school leaders' active role in creatively shaping a particular policy into a specific set of circumstances.

School principals and middle leaders make sense as well as give others a different sense of meaning as a social daily practice. Sense-making is brought about by school leaders and teachers working in a coordinated fashion. When we consider the words of Deal and Peterson (1999) who claim that 'shaping school culture is the heart of school leadership', we understand that a school leader should approach an educational change through the social practice of sense-making which focuses on the relationships between persons, actions, contexts, environments and cultures, and on activities that have become routine, ritual and systematic. In a similar fashion, Spillane and his colleagues (2002) argue that school leaders' sense-making process is nested in the school culture as well as integrated with its values, norms, beliefs and traditions. For this reason, Beabout (2012) recommends that sense-making be a central element for understanding school leaders' complexity. In this sense, sense-making is a catalyst for learning processes for principals, middle leaders and the educational staff when considering a new proposal for school change (Gawlik, 2015; Koyama, 2014).

SENSE-MAKING TRIGGERS

Sense-making is triggered by an event whose meaning is uncertain or ambiguous. Such a situation creates uncertainty as to the right mode of action. People feel 'that something is not quite right, but [they] can't put [their] finger[s] on it' (Weick and Sutcliffe, 2007: 31). Sense-making is also triggered by identity threat. It has argued that 'sense-making is triggered by a failure to confirm one's self' (Weick, 1995: 23). In addition, when identity is threatened or when it becomes ambiguous, people respond by working to understand the grounds for the challenge through the construction of new accounts of themselves (Maitlis and Christianson, 2014). Widespread evidence has shown that emotion has an important role in the sense-making dynamics (Maitlis and Sonenshein, 2010; Maitlis et al., 2013; Walsh and Bartunek, 2011). Emotion, a transient feeling state with an identified cause or target which can be expressed verbally or non-verbally, is an important factor in sense-making processes because it alerts individuals to unexpected and dangerous events (Grandey, 2008). Emotion has increasingly been acknowledged as important in explaining changes in key cognitive and social processes, influencing how events are interpreted (Schwarz and Clore, 2007), beliefs revised (Hodgkinson and Healey, 2011),

LEARNING PROCESS

Through sense-making, school principals and middle leaders can learn about educational challenges. This occurs when school environment changes rapidly and requires a response outside the leaders' existing repertoire. It presents a gap between an aspiration and an existing capacity, and requires adding new meaning so as to close this gap (Weick et al., 2005). Addressing this gap, formal leaders create a shared framework through which they share their thoughts and commitment based on norms, values and beliefs of their school culture. In this regard, school leaders' go through a learning process while making sense of educational change and reform as individuals (Saltrick, 2010). Beyond their own meaning making of reform demands, school leaders also shape teachers' and colleagues' sense-making through a collective learning process. Leaders play an important role in shaping what and how teachers learn about educational change and reform, so school principals and middle leaders, particularly, influence teachers' sense-making both directly and indirectly. Directly, they influence what teachers find themselves making sense of, by facilitating access to some reform messages rather than others. Providing teachers with interpretive frameworks and ways of understanding reform demands, formal leaders enable the educational staff to adopt strategies that develop and construct their understanding of the reform's intent. School leaders also influence teachers' sense-making indirectly as they participate with the teachers in a collective learning process through formal meetings and informal conversations. While fostering a collaborative work environment, providing professional development as well as ongoing information support, leaders shape the focus and direction of teachers' sense-

decisions made and strategy implemented (Huy, 2011). Therefore, emotion serves as an important factor in shaping the kind of sense-making process that occurs following a triggering event. Sense-making begins when individuals or groups are faced with events that are surprising, confusing or in contrast with the 'normal' situation. The process of sense-making rationalizes what has occurred and brings order to the disorder. Sometimes, however, unexpected events do not trigger sense-making processes, as they are quickly normalized, rationalized and interpreted in a way that is consistent with existing situations. Obviously, since sense-making is a difficult and unpleasant process, individuals must be energized to engage in it. For example, Maitlis et al. Lawrence (2013) note that individuals interpret their own negative feelings as a sign of problems in the environment, and their positive feelings as an indication that the situation is safe and does not call for intensive sense-making. In other words, triggering events that produce negative emotions like anxiety and sadness are more likely to energize search for meaning, while feelings of joy or delight suggest that no such effort is required.

making (Coburn, 2005; Fleming and Amesbury, 2012; Rigby, 2015).

Participating in social meaning making, both leaders and teachers learn how to interpret change and reform processes into school practices. Learning through interaction is crucial for understanding educational complexity. Collective learning enables schools to thrive under change conditions (Fullan, 2014; Leithwood et al., 2012). To effectively sustain an educational change, educators must undergo a complex learning process in which their beliefs and routines are questioned. A shared learning process calls for support from peers, opportunities to reflect and practice, regular feedback and self-evaluation. In particular, school leaders and teachers must habitually brainstorm about their objectives for improvement and also repeatedly construct mutual goals. Learning how to establish new routines through a collective construction of meaning making is essential for ongoing school improvement (Fullan, 2013).

Facilitating sense-making as a learning process among the educational staff fosters conditions for all educators to learn on a continuous basis (Knapp and Feldman, 2012). While constructing a shared meaning with their teachers, not only do school leaders model learning but they also learn alongside their educational staff about what works and what does not. Robinson and Aronica (2013) writes that a school leader who makes the biggest impact on learning is the one who participates as an active learner with the teachers in helping to move the school forward. In other words, leading learning means being proactively involved with teachers so as to understand how to make sense collectively through ambiguities. In this way, educators are

provided with a range of interpretations that go beyond their own experiences, deeply held values and beliefs. Leaders and colleagues shape each other's meaning making while managing internal school goals and external pressures (Gawlik, 2015). As system players, principals and middle leaders seek ideas from other similar schools that have been more successful in enacting educational change. By interacting with their peers, school leaders make key decisions that determine which reform demands they bring in, which demands they emphasize with the staff, and which they filter out. Throughout their learning process with peers, leaders select and filter which external demands will be adopted into their schools. More specifically, through interactions and conversations, peers' worldviews help leaders shape and construct their negotiation of reform demands into action. In this way, leaders have a broader platform to make sense and create a meaningful change in their school environment. Finally, sense-making serves as leverage for both individual and collective learning processes within and across schools. As active sense-makers, school leaders construct their own meaning of educational change and reform as well as enable and shape educators' sense-making. Through a social meaning construction, educators learn how to translate and interpret external demands into school practices. In doing so, formal leaders and teachers create a shared framework that engages the community of all those within the school culture. Engaging in a shared sense-making process equips school principals and teachers with the learning capacity to sustain school change.

While making sense of their leadership role as individuals, school leaders go through a learning process. Through interaction with reform demands and internal school goals at the same time, leaders learn to construct their meaning making as well as facilitate a social learning process among the educational staff. Here are some cases in point: In a case study that focused on the learning process of two beginning school leaders who made sense of their leadership role while confronting similar problems throughout their first year, such as decreasing student enrollments and school mergers which threatened the future of their schools (Slegers et al., 2009). Although faced with similar problems and relatively inexperienced, these school leaders varied in their sense-making process due to past experiences and the differing professional values they had developed by being engaged in different social contexts. Dan's interpretation of the decreasing intake of new students was influenced by his negative experience as a student at this school. His sense-making as well as learning processes were based on his previous

EMPIRICAL STUDIES

Analyzing empirical studies research of school leaders' sense-making processes yielded three core aspects: (a) how leaders make sense and enact education reform demands; (b) what learning process leaders go through as they create their own sense-making of their leadership role within the context of

experience as a teacher in a successful secondary school. His learning process resulted in a new school-wide pedagogical approach which focused on student learning. Eric interpreted the ongoing struggle of his school to survive due to a decline in student enrollment over the past few years as a key problem. He believed that his personal learning process should be developed into a collective learning process through which teachers will feel more responsible for their work and become true professionals. In order to 're-culture' the school, Eric encouraged his teachers to take on a variety of roles through an open discussion group on problem solving. Dan and Eric have set different goals and strategies each throughout their learning processes. Moreover, these leaders' learning processes have influenced their meaning making of problems during their career. Their differences could be traced back to the beliefs and values they have both acquired during their professional careers, and their participation in a specific professional culture. And yet, both school leaders constructed their meaning through interaction with their context as well as their environment. In essence, varied learning processes have led each leader to construct a different meaning of a similar problem.

An additional example demonstrates yet another school leader's way of developing sense-making as a learning process (Thomson and Hall, 2011). The Holly Tree School principal took great pains to manage the reform, set priorities for action, and, when necessary, resisted specific changes which would seriously undermine her most deeply held beliefs about teaching and learning. For example, when the Literacy Hour was introduced into English primary schools, Holly Tree was one of those schools that did not conform because the educational staff believed it would work against the literacy teaching practices they supported. In other words, it made sense to the staff that they would learn how to do new things and to move forward while keeping their flexibility. In this regard, collective resistance and autonomy were crucial for both the school principal and the educational staff. Using Weick's (1995) sense-making theory as a lens illustrates what the school was, what it stood for and the sense its staff had of 'what kind of teachers we are and want to be'. This case study of Holy Tree primary school shows how a sense-making process moves beyond the principal's actions to an integrated picture of how it actually works as a social practice. It seems that the meaning making of school principals and teachers requires both a personal and a social learning process that develop through formal and informal interactions.

educational reform; and (c) how leaders encourage and promote learning as a sense-making process among the educational staff within the context of educational reform. The examples provided below use sense-making theory as a research framework thus address school leaders' enactment of reform demands in their

social contexts through individual and collective sense-making processes.

LEADERS EDUCATION

As local policymakers, school leaders' sense-making processes vary across schools. By drawing on their prior knowledge, deeply held values, beliefs, practices and social contexts, leaders decide which policy messages they wish to adopt and which to ignore. Here are some cases in point. An ethnographic study which focuses on three New York City high schools clearly demonstrates how leaders make sense of accountability and choice policies. Although the district did not allow school leaders to select students based on their performance, principals retained higher achieving students. School leaders' sense-making process of choice policy demands is influenced not only by their professional biographies and worldviews but also by social networks in which they are embedded (Jennings, 2010). The principal of Excel Academy (which belongs to an organization running a small set of schools in a geographic community) had dyadic ties with local principals. Yet, the lack of trust in colleagues' intentions has limited her willingness to widely activate the relationships in which she was embedded. As a result, the principal's sense-making process occurred in isolation. The principal of Renaissance High School (a franchise school that belongs to an organization running multiple schools) was engaged in an ongoing conversation regarding accountability demands with a network of principals affiliated with Renaissance Schools. The Renaissance network exposed the principal to new contacts from veteran peers. Hence, the principal shared information with her colleagues regarding when she could safely bend the rules as well as which policy demands she could ignore. The principal of Horizons High School (which belongs to a professional development organization), had colleagues from different parts of the city. Her primary interactions with principals occurred in a dense network of educators linked together by their commitment to social justice and progressive education. The principal's network supported her decision to improve disadvantaged students' achievements at the expense of other accountability demands. Although these schools operated within the same local framework, each of the three leaders made sense of the accountability environment differently. Principals' sense-making processes were based on past experiences and on social networks with other school principals. Specifically, principals' meaning making involved three processes: gathering information about the accountability targets, interpreting signals based on their past experiences and professional biographies, and framing sense-making through their social agency. In this regard, the principals of Renaissance and Horizons High Schools felt they had significant agency in handling accountability targets. In other words, they made sense of reform demands through the multiple interests of their students. Nevertheless, the principal of

Excel Academy made sense of accountability demands in isolation. She did her best to meet accountability targets yet did not believe these targets could be manipulated.

Another way of thinking about leaders' sense-making as a process of negotiation and social interaction is suggested in a qualitative case study (Koyama, 2014). This study examines how principals in New York City negotiate and mediate the districts responses to comply with NCLB's high stakes standardized testing and data-monitoring accountability policy demands. The response of 23 of the 45 principals participating in the study reflects the dissatisfaction with ARIS ('Achievement Reporting and Innovation System') and thus the use of alternative systems. The intention of the district to position ARIS as the one, formal data system and exclude alternative systems and methods did not, however, deter principals from utilizing other methods to generate and analyze data. Principals creatively negotiated their responsibilities by selectively appropriating features of ARIS, buying alternative locally created data management software, repurposing contracts with outside testing companies, and pulling together a variety of seemingly desperate people, ideas and materials. The findings reveal that principals play active policy roles in negotiating federal regulations and local initiatives while maintaining commitment to their teaching staff, students, students' parents and their own values. Specifically, by generating, collecting and reporting data that would suit their school intention, leaders negotiate their power the way they see fit.

In another case, school leaders were responsible for the failure of the Chinese New Curriculum Reform. A study in Shanghai examined why eleven secondary school principals believe the reform failed to promote student learning (Walker et al., 2011). They were given power to develop research courses. In practice, however, these courses over complicated the curriculum and confused teachers and principals alike. The principals were unconvinced about the efficacy of the change, since it had created an additional burden as well as reduced their ability to facilitate learning. School leaders claimed that they could not implement the reform as long as the examination system remained unchanged. Therefore, many principals were puzzled and doubted their leadership role, due to a gap between reform's intent and its actual practice at the school level. They argued that the new reform has promoted a change but this change remained relatively shallow. School principals, therefore, were reluctant to risk the traditional learning practices that had produced good exam results. They failed to initiate real change because of ambiguous signals that were conveyed by the government.

A different study describes an active negotiation process of the AYP requirement (Adequate Yearly Program) to promote student achievement (Black and Shircliffe, 2013). In a large

metropolitan school district in Florida, 10 veteran school and district leaders acted as bricoleurs, a term often associated with actor-network theory (ANT) a theory that focuses on how actors come together to form dynamic associations, when interpreting reform demands to achieve internal goals. More specifically, leaders questioned how test scores were used to evaluate school effectiveness. Contradictions between policy and local goals have resulted in creative strategies that have bridged the gap between everyday school practices and external demands. Put differently, leaders responded to accountability pressures by engaging in strategic behavior. Through the development of professional strategies, they successfully balanced accountability demands and school internal goals. They did it by ignoring some accountability demands that were too excessive while facilitating

COLLECTIVE PROCESS

School leaders foster a social sense-making process among their educational staff while creating different conditions for teachers' learning. Through collaborative meetings, principals and teachers shape each others' meaning making of the educational change. In this way, educators learn which reform demands they need to adapt for their school environment. For specific examples of this we can refer to a multiple case study of 15 schools and their school districts (four urban school districts) in the USA (Knapp and Feldman, 2012), which illustrates how leaders facilitate learning as a sense-making process among their educational staff. These schools were all outperforming the district average of school achievement. Although these schools were situated in different districts, the external accountability environment was similar across districts. Yet, though working in different contexts, that is, elementary, middle and high schools, these school leaders found similar ways to make good use of what the external system provided and required so as to serve internal purposes. First, the principals took up the main principles and expectations that external accountability demanded of them, and internalized them with the educational staff. Second, the principals made extensive use of the information and tools that the external accountability provided to further the school's own learning improvement agenda. This could be seen on occasions that the school principals created, in which staff talked about and shared their work in ways that others could see and react to. In this way, the staff was motivated to display their progress toward goals of improvement. In doing so, principals used professional development for the sake of learning new and better ways to meet higher expectations. Hence, school leaders engaged teachers in ongoing conversations to achieve desired goals. As mentioned above, school leaders created mechanisms for their staff to internalize wide and

others that were beneficial to school practices. As mentioned above, these responses provide a unique insight into the ways by which school leaders negotiate, mediate and contribute to reform mandates in their local contexts (Koyama, 2014). Namely, formal leaders play active policy roles while enacting reform demands in the context of their experiences, beliefs and values. Within this complicated assemblage of reform demands, leaders create their own sense-making to inform their actions and roles as local policy-makers. We can say, then, that leaders mediate between external demands and internal goals while interpreting and translating reform expectations into school practices (Spillane and Kenney, 2012, Zulfakar and Zulkarnaen, 2018).

external expectations for their work (Knapp and Feldman, 2012). That is, they learned to work more collaboratively, coach teams and interact with new data while constructing data of their own for the purposes of learning improvement. By modeling their learning, they encouraged others to focus on learning improvement. Through the mechanism of exposing practice to scrutiny, both principals and teachers learned together new pedagogical practices. As a final consideration, a case study of two elementary charter school leaders in Detroit Metropolitan Region demonstrates how school principals' sense-making of NCLB influences the meaning making of their educational staff (Gawlik, 2015). Both schools had accountability systems based on performance, and were in need of improvement based on their school grade. Considering themselves more than mere recipients of information, the principals actively constructed their teachers' understanding of reform messages through the use of metaphors and modeling at the school level. Through these interpretative frameworks of metaphors and modeling, school leaders shaped their staff members' understanding of multiple reform messages. More specifically, principals spent time constructing meaning with their teachers around professional development in two ways. First, they focused on specific aspects of accountability reform. Second, through a shared sense-making process, school leaders and teachers set boundaries regarding which policy messages they interpreted while refraining from dealing with others. In particular, their leadership practice was characterized by facilitating and guiding a collective meaning rather than just transmitting their own interpretation to their educational staff. Thus, these principals were strong advocates in the construction of shared understanding by providing their teachers with both formal settings and informal conversations for collaboration.

IMPLICATIONS

Research on educational change has shown that reforms fail to achieve their desired goals due to a lack of understanding of

policy's intent (Coburn, 2005; Russell and Bray, 2013). This is why sense-making is so important in understanding policy implementation, since people apparently act on the basis of what

has meaning for them. More specifically, educators make sense of external policies, which in turn affects the change in their practices. Reform implementation is strongly influenced by educators' understanding of it in addition to the larger policy environment in which the reform is implemented. Policymakers, therefore, should allow educators a wider space to make sense of the reform to be implemented, in light of the specific needs of local school contexts. Consequently, the district should actively engage both leaders and teachers in sense-making activities when new policy measures are introduced (Matsumura et al., 2012). Education reform can only be effective if policies are well implemented. To improve the quality of education that schools provide, policies must focus on balancing external pressure and support (OECD, 2015). Put differently, policymakers should promote an understanding that encourages an effective balance between reform demands and school internal goals, thus leaving room for school leaders' professional judgment. The district cannot put too much pressure on a school to implement the policy because reform will either be ignored, altered excessively, failed or rejected. Accordingly, policymakers have an important role in facilitating sense-making processes. For this purpose, the district needs to invest time up front communicating and working with building school leaders and teachers so as to help them attain a deeper understanding of reform demands, thus providing educators with clarifications on reform priorities as well as making sure that priorities are acted on. Therefore, fostering sense-making requires a district focus on professional development. Educators, like the students they teach, need support and guidance when learning and implementing a new initiative. This holistic understanding invites a new perspective on the implementation of school reform programs, thus developing an understanding of the interdependent relationship between school leaders, teachers and policymakers.

Research that focuses on a sense-making framework to understand how school leaders mediate the effect of policies on teaching is consistent with a larger body of research, showing that leaders play a key role in the leadership and implementation of educational reforms (Neumerski, 2013). In other words, policies are processes which are shaped by the school leaders involved. Thus, a closer examination of leaders' sense-making is important since they are directly responsible for the implementation of reforms. Moreover, when leaders are successful in influencing the sense-making of other members, these leaders are motivated to make changes in their own roles and practices. In this way, change is initiated through the cycles of both school leaders and staff members' sense-making. Aspiring school leaders should be equipped with strategies for deep reflection in principal preparation programs. Attempting to understand their own actions and reactions, sense-making process is an essential framework since it increases school leaders' self-knowledge of professional beliefs, values and practices (Murray and Kujundzic, 2005). The sense-making

process legitimates prospective principals to observe problems neither as a stigma nor as a sign of failure, but rather as a challenge that provides a valuable component for their leadership strategies (Helsing, 2007). Thus, making sense of individual-organizational practices in leadership preparation, increases the burden and responsibilities of all cohort members, and yet, at the same time, it evokes the tremendous potential for their individual and communal growth. Hence, providing prospective leaders with strategies in order to develop a more sophisticated understanding of sense-making process in terms of its social, political and emotional aspects is crucial for these school leaders' professional identities. This will nurture a safe environment for leaders in which to learn about the vital role of sense-making in today's reality (Rigby, 2015). It will also foster school leaders' understanding regarding what makes sense-making effective as well as how they can engage others through a shared process. In addition, one of the most effective ways to learn about sense-making is either to listen to current leaders talk about their own sense-making activities or watch videos of leaders in action and analyze their sense-making activities. In this sense, providing guiding questions will prompt a fruitful dialogue: how did the leader know that sense-making was needed? What types of data did he or she collect? Who else was engaged? Through different sense-making examples, current and future school principals can apply what those leaders actually did in their sense-making to their own experiences. Furthermore, emotions play an important part when inducing a change into schools. On the one hand, it may motivate people to act but on the other hand, it might inhibit their ability to interpret the situation. Hence, school leaders need to manage emotions in ways that can enable educators to engage in sense-making. In particular, they should shape educators' interpretations of trigger events (for example, national reform) through a talk, a text or through their own emotional expressions (Van Kleef et al., 2012). Given that emotions have a strong influence on sense-making processes, school leaders should incorporate emotion into their attempts to help educators make sense of challenging events. This is critical since different individuals are likely to have different emotional reactions, which determine whether the change is likely to be accepted.

Sense-making provides a generative framework to the process of going through a school reform (Thomson and Hall, 2011). Not only does sense-making contribute to knowledge in the field, but it is also a course of action per se, and as such provides help to school leaders as they navigate through complex inputs, contradicting demands and pressures in the school, and take consequent action. Since there has been little research on school leaders' experiences with and responses to education reforms, future inquiry has the potential of enriching the literature regarding school leaders' role in shaping the understanding of the educational staff so as to meet reform demands. More specifically, how school leaders make sense of reform demands

and adapt them to their school environment invites further exploration into the intersection between educational change and school leaders' sense-making practices (Gawlik, 2015, Zulfakar, 2019). In this regard, future research should explore activities that leaders construct around their sense-making processes. It is necessary to explore the role of school leaders as sense-makers and especially how their sense-making is situated in multiple social contexts. Given the great importance of leaders for the implementation of educational change processes, it is crucial to understand better the ways in which they develop their sense-making as well as enact practices. In a review of sense-making research on crisis and change, Maitlis and Sonenshein (2010) emphasize the need for scholars to attend more closely to the politics of sense-making. It appears that sense-making research has become less politically naive since Weick's (1969) observations nearly a decade ago. More specifically, there are power struggles and tensions in the sense-making process in the form of different parties' campaigns which compete to shape meanings of and in school systems and gain acceptance for a preferred story. Moreover, little theory has been developed regarding the role that emotion plays in sense-making and its impact on sense-making processes. Emotion has often been seen as an impediment to sense-making (Weick, 1995). In recent years however, we have seen an interest in better understanding emotion as a part of the sense-making process, at both individual and collective levels (Holt and Cornelissen, 2013). Maitlis et al. (2013), for example, showed how negative intense emotions are most likely to signal the need for and provide the energy that fuels sense-making in organizations. At

the team level, Maitlis and Christianson (2014) argued that positive emotional dynamics enable discussions in which members engage in deeper sense-making and greater agreement about an appropriate course of action, while emotional dynamics that are mixed or negative are associated with more superficial sense-making and a failure to act collectively. Therefore, it is important to investigate leaders' role in inducing emotions as part of the sense-making process. How are individuals who hold different pieces of information able to collectively construct new meaning? This is an important question in collective sense-making that appears to have been relatively little pursued; in particular, the question of how sense-making occurs in groups and communities is important to pursue. There are also significant gaps in research at the team level, with fewer studies of team sense-making in general, and especially research examining the relationship between sense-making and key team processes, such as coordinating, decision making and strategizing (Maitlis and Christianson, 2014). Furthermore, it is important to understand how sense-making takes place in different school contexts because sense-making is not a one-size-fits-all doctrine that provides a yes or no answer for a rainbow of scenarios (Dionysiou and Tsoukas, 2013). Put simply, the more diverse the contexts within which sense-making is studied, the more likely it is for the sense-making process to be enriched. Moreover, longitudinal studies are greatly needed as sense-making is a continuous and ongoing process (Maitlis and Christianson, 2014).

CLOSING

The need to explore sense-making from a holistic approach finds expression in studies that have mainly investigated the interpretation process in sense-making rather than focus on all three sense-making processes (creation, interpretation and enactment). Therefore, studies should take into account all of the three processes when studying school leaders' sense-making. Another holistic aspect can be found in the work of Noe (2004) which suggests that 'sense' cannot be split from 'action', and in a similar fashion 'creation' cannot be separated from 'enactment' (Hutto and Myin, 2013). Accordingly, future research needs to pay close attention to the three sense-making processes through

which formal leaders and teachers interact. Individual and collective sense-making processes can assist teachers, school leaders and policymakers in facilitating an effective implementation of reform, thus, promoting a long-term school improvement. Individually, a closer examination of leaders' sense-making process should lead towards deeper understanding of the ways in which they make meaning of the complexity of their work. Collectively, sense-making may serve as a catalyst to learning processes for both school leaders and the educational staff when considering a new education reform.

REFERENCES

- [1]. Beabout B (2012) Turbulence, perturbation and educational change. *Complicity: An International Journal of Complexity and Education* 9(2): 15-29.
- [2]. Black WR and Shircliffe BJ (2013) Negotiating the downward rush: an exploration of school leaders' strategic implementation of accountability policies. In Barnett B, Shoho A and Bowers A (eds) *School and District Leadership in*

an Era of Accountability. Charlotte: Information Age, pp. 109-139.

- [3]. Braun A, Maguire M and Ball S (2010) Policy enactments in the UK secondary school: examining policy, practice and school positioning. *Journal of Education Policy* 25(4): 547-560.
- [4]. Brezicha K, Bergmark U and Mitra DL (2015) One size does not fit all: differentiating leadership to support teachers in school reform. *Educational Administration Quarterly* 51(1): 96-132.

- [5]. Brown M, Rutherford D and Boyle B (2000) Leadership for school improvement: the role of the head of department in UK secondary schools. *School Effectiveness and School Improvement* 11(2): 237-258.
- [6]. Clifford M, Behrstock-Sherratt E and Fetters J (2012) *The Ripple Effect: A Synthesis of Research on Principal Influence to Inform Performance Evaluation Design*. Washington, DC: American Institute for Research.
- [7]. Coburn CE (2001) Collective sensemaking about reading: How teachers mediate reading policy in their professional communities. *Educational Evaluation and Policy Analysis* 23(2): 145-170.
- [8]. Coburn CE (2005) Shaping teacher sensemaking: school leaders and the enactment of reading policy. *Educational Policy* 19(3): 476-509.
- [9]. Cordeiro PA and Cunningham WG (2012) *Educational Leadership: A Bridge to Improved Practice*, 5th edn. Boston, MA: Pearson.
- [10]. De Certeau M and Rendall S (1984) *The Practice of Everyday Life*. Berkeley, CA: University of California Press.
- [11]. Deal TE and Peterson KD (1999) *Shaping School Culture*. San Francisco, CA: Jossey-Bass Publishers.
- [12]. Dean J (2003) *Subject Leadership in the Primary School: A Practical Guide for Curriculum Coordinators*. Abingdon: David Fulton.
- [13]. Dionysiou DD and Tsoukas H (2013) Understanding the (re)creation of routines from within: a symbolic interactionist perspective. *Academy of Management Review* 38(2): 181-205.
- [14]. Fiol MC and Lyles MA (1985) Organizational learning. *Academy of Management Review* 10(4): 803-813.
- [15]. Fleming P and Amesbury M (2012) *The Art of Middle Management: A Guide to Effective Subject, Year and Team Leadership*. New York: Routledge.
- [16]. Flessa JJ (2012) Principals as middle managers: school leadership during the implementation of primary class size reduction policy in Ontario. *Leadership and Policy in Schools* 11(3): 325-343.
- [17]. Fullan M (2013) *Motion Leadership in Action*. Thousand Oaks, CA: Corwin Press.
- [18]. Fullan M (2014) *The Principal*. San Francisco, CA: Jossey-Bass.
- [19]. Gawlik M (2015) Shared sense-making: how charter school leaders ascribe meaning to accountability. *Journal of Educational Administration* 53(3): 393-415.
- [20]. Grandey AA (2008) Emotions at work: a review and research agenda. In Cooper C and Barling J (eds) *The Sage Handbook of Organizational Behavior*. Thousand Oaks, CA pp. 235-261.
- [21]. Helsing D (2007) Regarding uncertainty in teachers and teaching. *Teaching and Teacher Education* 23(8): 1317-1333.
- [22]. Hodgkinson GP and Healey MP (2011) Psychological foundations of dynamic capabilities: reflexion and reflection in strategic management. *Strategic Management Journal* 32(13): 1500-1516.
- [23]. Holt R and Cornelissen J (2013) Sensemaking revisited. *Management Learning* 45(5): 525-539. Available at: <http://mlq.sagepub.com/content/early/2013/05/21/1350507613486422.abstract>.
- [24]. Hutto DD and Myin E (2013) *Radicalizing Enactivism*. Cambridge, MA: MIT Press.
- [25]. Huy QN (2011) How middle managers' group-focus emotions and social identities influence strategy implementation. *Strategic Management Journal* 32(13): 1387-1410.
- [26]. Jennings JL (2010) School choice or schools' choice? Managing in an era of accountability. *Sociology of Education* 83(3): 227-247.
- [27]. Kaniuka T (2012) Toward an understanding of how teachers change during school reform: Considerations for educational leadership and school improvement. *Journal of Educational Change* 13(3): 327-346.
- [28]. Zulfakar (2019) Educational Research Methods in Qualitative and Quantitative Perspective, *International Journal of Multidisciplinary and Current Research*: 429-437, DOI: <https://doi.org/10.14741/ijmcr/v.7.4.5>
- [29]. Zulfakar and Fahrudin.(2018), Institutional Logics. *International Journal of Recent Scientific Research*. 9(4), pp. 25855-25863. DOI: <http://dx.doi.org/10.24327/ijrsr.2018.0904.1942>
- [30]. Zulfakar and Zulkarnaen (2018) Leadership in Children's Education in West Nusa Tenggara-Indonesia, *International Journal of Current Research*,10(10) pp. 74867-74872, DOI: <https://doi.org/10.24941/ijcr/32716.10.2018>