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Implications of pedagogical beliefs and pedagogical content knowledge for the reading comprehension strategy instruction of teachers

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Abstract

This study is an attempt to investigate the relationship between theory and practice on teachers' reading comprehension strategy instruction. One hundred twenty-one (121) Math, Science, and English language teachers participated in the present study. The descriptive research design was used to address the research problem at hand. A survey was administered to obtain the necessary information about the teachers' perceptions on and awareness of teaching comprehension strategies, while observation of classes by experts was conducted to corroborate the perceptions of the teachers with their instructional practices. The measure of central tendency and correlation were the tools used to analyze the quantitative data. Pearson r was utilized to determine the relationship among the three variables (i.e., pedagogical beliefs, pedagogical content knowledge, and instructional practices), while the mean scores were computed to ascertain the beliefs, knowledge, and practices of the teachers. The results indicated that while teachers believed in the importance of comprehension strategy instruction, they hardly knew about its principles. Their ambiguous understanding of pedagogical content knowledge limited their use of comprehension strategies in instruction. Moreover, a significant correlation was established between the teachers' beliefs and knowledge of their practices. However, the actual practices as observed by experts did not match the teachers' perceptions on pedagogical beliefs and pedagogical content knowledge. The study likewise revealed that the perceptions of the content-area teachers were not observed in their practices in comprehension strategy instruction.

Keywords: Comprehension strategy instruction, instructional practices, pedagogical beliefs, pedagogical content knowledge

1. Introduction

The recent developments shaping the 21st-century economies and societies pose significant challenges, especially for basic education teachers. Skills required of the 21st-century students are changing fast with technological advancements; hence, 21st-century education and teachers must respond accordingly to such a challenging context. To prepare teachers in this environment marked by unstoppable changes, Donaldson et al. (2011) suggested a "state of the art knowledge as part of a more dynamic career-long teacher education" (p. 14). Even government and private institutions have partnered to achieve high-quality teaching for students' successful learning. However, this can only be achieved if teachers continue to develop professionally and equip themselves with a new set of pedagogical competencies. In fact, the European Commission made this clear in 2004 (as cited in Donaldson, 2011), emphasizing the need for teachers to have extensive subject knowledge; a good knowledge of pedagogy, skills, and competencies to guide and support learners; and an understanding of the social and cultural dimensions of education.

The need to continuously develop teacher quality was also reflected in the *Asia-Pacific Regional Education for All Report: A Synthesis of the National EFA Reports* (UNESCO, 2015a). Highlighted in the report were the poor quality of teachers and teaching, and lack of a systematic teacher training and development. It was recommended that greater attention be given to the quality of education, specifically on learning outcomes, contents of learning, and teaching and learning practices. The report added that achieving quality education and learning is only possible by having competent, qualified, well-trained, and motivated teachers.

In recent years, commitments to strengthening the quality of teachers in the Philippines have been the focus of initiatives for teacher training. Guided by the National Competency-Based Teaching Standards (NCBTS) as a framework, Filipino teachers recognize what effective teaching is in relation to students' learning process. The framework also serves as a guide to teacher-development programs for hiring and promotion (UNESCO, 2015b).

However, in spite of the implementation of educational reforms, there are still gaps as indicated in the Philippine Education for All 2015 Review Report (UNESCO, 2015b). As revealed in the said report, the results of the National Achievement Test (NAT) for elementary schools was 6% points away from the 75% targeted Mean Percent Score (MPS), with 68.9 MPS in the school year 2012-2013. The report further indicated that one of the main causes of low-quality education in the country is the deficiency in the necessary skills and competencies of teachers to deliver quality education. In the same report, the results of the Test of English Proficiency for Teachers (TEPT), which covers subtests on structure, written expression, and reading comprehension, show that only 50.53 % was attained. This confirms that teachers lack the minimum competencies needed to deliver the desired quality education as shown in the TEPT score of 50%, which indicates that the language proficiency of the teachers remains a challenge. Moreover, educational gaps that focus on instituting quality teaching and learning must also be addressed.

Hence, this study was influenced by the EFA Report recommendation that to ensure the quality of teaching, there must be continuous professional development. Consequently, this study focuses on the competencies of K-5 and -6 English, Science, and Math teachers in teaching reading comprehension.

A primary assumption of the present study is that reading comprehension strategy instruction (RCSI) is particularly suited for helping students learn to handle the increased instructional and textual demands they experience as they transition from lower-elementary to upper-elementary grade level. As they move from the primary to the intermediate level, the focus of their instruction shifts from "learning how to read to using reading to learn" (Roe, Stoodt-Hill, & Burns, 2007, p. 359). In this level, they are expected to read and understand increasingly more difficult materials in different content areas. To teach students to read in order to learn, teachers must be prepared on how different comprehension strategies can be taught to help their students who have relatively inadequate experience in reading expository texts found in K-5 and -6 textbooks.

The three factors deemed important in this study are pedagogical beliefs, pedagogical content knowledge, and instructional practices of teachers. Previous literature shows a number of studies that address the comparison of teachers' beliefs and practices in teacher education (Ng, Nicholas, & Williams, 2010; Olafson & Schraw, 2006; Powers, Zippay, & Butler, 2006; Seymour & Osana, 2003; Theurer & Onofrey, 2006; Wilson, Grisham, & Smetana, 2009). However, Guthrie et al., (2004) noted that professional development on comprehension strategy instruction is lacking, particularly in the disciplines of Math, Science, and English.

Notably, the study of Bernardo and Limjap (2003), which reported on mathematics teachers' pedagogical beliefs and their implications for mathematics achievement of elementary and secondary students, is the only study that focused on pedagogical beliefs about reading comprehension instruction. Unlike the present study that focuses on the relationship of teachers' beliefs and instructional practices, the study of Bernardo and Limjap only investigated the beliefs of teachers. As Chou (2008) contends, "The little amount of studies on investigating teacher's beliefs' in reading instruction have indicated an unclear picture of teacher's belief construct in teaching reading" (p. 192).

Alger (2007) suggests that research on pedagogical content knowledge of teachers must be conducted to explore more avenues on how teachers can be trained in strategy instruction. He claims that strategy instruction should be implemented in content-area classrooms so that teachers can be effective in addressing the needs of students.

1.1 Teacher Cognition Theory

This study is founded on the perspective that reading instruction has significantly changed from the traditional view of teachers as transmitters of knowledge to being facilitators in the classroom. Such is premised on the Teacher Cognition Theory espoused by Borg (2003; 2009), which states that teachers are active-thinking decision-makers who make instructional choices by drawing on complex, practically-oriented, personalized, and context-sensitive networks of knowledge, thoughts, and beliefs. The theory highlights 'what teachers do and

think' and 'what decisions they make and why.' The teachers' education, their personal experiences as learners, and their classroom experiences are the constructs that form the mental dimension of their cognition. The knowledge, attitudes, and beliefs of teachers become the strong indicators of instructional classroom practices (Gunning, 2006). These are manifested in teachers' decisions and choice of instructional materials (Borg, 2003). What teachers do in the classroom is guided by what they believe, which can act as filters through which instructional decisions are made (Pajares, 1992). The nature and the role of these beliefs are essential for understanding the choices and decisions teachers make. Handal and Herrington (2003) claim that what teachers bring to their classrooms are sets of beliefs about teaching and learning that were shaped through years of personal experience, perceptions of students they teach, choice of subjects and activities, decision-making, evaluation in the classrooms, teacher's role definitions, and knowledge of teaching strategies. These beliefs ultimately interact with or influence the teachers' planning and delivery of instructional procedures. As facilitators, cognitivist teachers regard readers not as mere recipients of information but as active builders of their own comprehension.

1.2 Constructivist Pedagogy

Another view of reading in which this study was anchored is constructivist pedagogy (CP) as espoused by Richardson (2003). Drawn from the theory of constructivism,

> 'constructivist pedagogy is thought of as the creation of classroom environments, activities, and methods that are grounded in a constructivist theory of learning, with goals that focus on individual students developing deep understanding in the subject matter of interest and habits of mind that aid in future learning. (p. 1631)

Constructivism, a learning theory from which CP is premised, states that learners 'construct' their own understanding in an active, mental process of development. In an educational setting, the learners reflect on their experiences to build and create meaning and knowledge (Gray, 1997). When a new experience is encountered, the learners construct a new understanding of that experience. Richardson (2003) explains that constructivism is a theory of learning or meaning making. When individuals create ideas, the basis of an interaction is between what they already know and believe, and the ideas and knowledge with which they come into contact.

Richardson (2003) proposed the five elements of constructivist pedagogy:

> (1) attention to the individual and respect for students' backgrounds and developing understandings of and beliefs about elements of the domain; (2) facilitation of group dialogue that explores an element of the domain with the purpose of leading to the creation and shared understanding of a topic; (3) planned and often unplanned introduction of formal domain

> knowledge into the conversation through direct instruction, reference to text exploration of a Web site, or some other means; (4) provision of opportunities for students to determine, challenge, change or add to existing beliefs and understanding through engagement tasks that are structured for this purpose; and (5) development of students' meta-awareness of their own understandings and learning processes. (p. 1626)

Moreover, Richardson describes the constructivist classroom as such that the teacher provides students with opportunities to develop deep understandings of the material, internalize it, understand the nature of knowledge development, and develop complex cognitive maps that connect bodies of knowledge and understandings. Also, focus is given to develop the students' thinking ability in various disciplines. Inasmuch as the constructivist classroom focuses on specific domains, the teachers' content knowledge (CK) and pedagogical content knowledge (PCK) are likewise important. According to Richardson, these domains of knowledge "helps teachers in the interpretation of how students understand the materials, develop activities that support students when students explore concepts, hypothesis, and beliefs, guide discussions toward a shared understanding, provide guidance on the sources for additional formal knowledge and correcting misconceptions" (p. 1631).

This shows the rationale for the teaching of reading strategies; that is, comprehension can be improved by teaching students to use specific cognitive strategies or to reason strategically when they encounter barriers in understanding what they read.

1.3 Comprehension Strategy Instruction

Based on the notion of comprehension strategy instruction, Cooper (2000) and Duke and Pearson (2002) describe comprehension strategies as procedures that guide students as they attempt to read and write. This means that readers employ cognitive strategies as they process the text actively when they generate questions about what is read. The values of cognitive strategies in comprehension instruction include: (1) their usefulness in the development of instructional procedures, and (2) learning of these procedures by students as aid in their reading and learning, independent of the teacher.

However, comprehension strategy instruction alone is not sufficient for improving students' reading comprehension. Previous studies (Hall, 2005; Keer & Verhaeghe, 2005; Pawan, 2008; Seymour & Osana, 2003) revealed the important role of teachers' beliefs, especially in the content-area reading classroom. Generally, it is acknowledged that teachers possess pedagogical beliefs about reading and reading instruction, and that these beliefs and theories tend to shape the nature of their instructional practices (Kagan, 1992).

1.4 Pedagogical Beliefs, Pedagogical Content Knowledge, and Instructional Practices

The relationship between teachers' beliefs and instructional practices has been given attention in different disciplines such as Science and Math education (King, Shumow, & Lietz, 2000). This relationship has also drawn the attention of researchers and reading experts (Leu & Kinzer, 2003; Tompkins, 2003).

To be effective, reading teachers' beliefs must be aligned with their instructional framework and must implement such accurately. As teachers in the different learning areas, they must be knowledgeable about content-area reading instruction as Vacca and Vacca (2002) suggested. Although there is a popular assumption that they are not reading teachers, Vacca and Vacca emphasize that every teacher should be a reading teacher. Their content knowledge, together with pedagogical content knowledge of reading instruction, would help students better understand what they read in a particular content area (Ulusoy & Dedeoglu, 2011).

Content-area teachers' beliefs and understandings of teaching and learning play an important role in their classroom practices and professional growth. However, the opposite seems to happen in the classroom. Previous studies on teachers' pedagogical beliefs outweigh the actions that teachers may take to provide instruction (Block & Parris, 2008; Calderhead, 1996; Sandvick, van Daal, & Ader, 2014). As Alger (2007) postulated, teachers make decisions about classroom instruction in light of the beliefs they hold about teaching and learning; and such beliefs influence their goals, procedures, materials, classroom-interaction patterns, roles, students, and the schools where they teach. Such assumptions are anchored on the theories on teacher cognition by Borg (2003; 2006) and constructivist pedagogy by Richardson (2003).

Similarly, Vacca and Vacca (2005) and Kuzborska (2011) affirmed that teachers' knowledge in and approaches to teaching reading are influenced by their schema and beliefs. This means that the teachers interpret and respond to new ideas in relation to their existing beliefs. They may recognize that students need additional strategies, but that does not ensure that they will embrace the task of teaching the strategies they perceive themselves to be knowledgeable about. Thus, beliefs may affect actions negatively when the teachers feel inadequate in their respective classrooms, and such a situation may result in problems and disappointments (Bandura, 1986).

Likewise, Alger (2007) attributes teachers' actions in the classroom to entrenched beliefs and assumptions. He elaborates that, "Teachers have a tendency to teach the same way their master teachers taught or based their teaching decisions on the past experiences as a learner" (p. 621). In a similar vein, Sporer, Brunstein, and Keischke (2009) view that teachers' decisions in the classroom is a manifestation of their beliefs on instructional procedures they experienced.

Simply put, although teachers provide students with comprehension tasks informed by current research on comprehension process, it can be inferred that they may not employ the appropriate instructional strategies and procedures in teaching their students the reading strategies necessary to accomplish specific tasks. They may assume that the students were

taught these strategies in previous grades, and that they would improve such through reading (Pressley, Wharton-McDonald, Mistretta-Hampston, & Echeveria, 1998).

Guided by the theories on teacher cognition (Borg, 2003; 2006) and cognitive pedagogy (Richardson, 2003), this study examined the teachers' pedagogical beliefs in teaching reading and matched them with their pedagogical content knowledge and reading comprehension strategy instruction in the content areas of Math, Science, and English.

The present study intends to identify the pedagogical beliefs, pedagogical content knowledge, and practices in comprehension instruction of K-5 and -6 teachers. It provides a substantial amount of information regarding the use and application of comprehension strategy instruction procedures in the classroom.

Specifically, it seeks to answer the following questions:

1. What are the pedagogical beliefs, pedagogical content knowledge, and practices of elementary school teachers in reading comprehension strategy instruction?
2. What practices are used by elementary school teachers in reading comprehension strategy instruction as observed by experts?
3. Is there a difference between the private and the public school teachers' pedagogical beliefs, pedagogical content knowledge, and instructional practices?
4. Is there a congruence among the pedagogical beliefs, pedagogical content knowledge, and practices of elementary school teachers in reading comprehension strategy instruction?

2. Method

2.1 Research Design

The descriptive research design was used in the present study to describe the collected information for analysis and correlation (Johnson, Onwuegbuzie, & Turner, 2007). To collect the descriptive data, survey-questionnaire and observation techniques were employed. The cross-sectional survey was administered to collect information from predetermined names of teachers (Fraenkel, Wallen & Hyun, 2013). Observations of classes were conducted to describe the degree of relationship among the quantitative variables. The conduct of classes was video-recorded for later observation and analysis (Knupfer & McLellan, 2001). Observers (i.e., reading experts) were asked to describe, infer, and evaluate the behaviors of the teachers in the reading classroom. Further, to guarantee the accurate recording of instructional practices of the teachers, the expert observers were asked to accomplish an observation form designed by the researcher.

Moreover, correlation was done to determine the extent of relationship among the teachers' pedagogical beliefs, pedagogical content knowledge, and instructional practices. In

the analysis of data, the use of descriptive statistics yielded valuable information based on the statistical measures of central tendency and correlation. Insofar as in-depth discussion and analysis was needed to explain the quantitative data, the qualitative data collection likewise provided a comprehensive understanding of the quantitative results, which can only show the general relationship among the variables. The qualitative results helped clarify the outcomes obtained from the quantitative data (Knupfer & McLellan, 2001).

2.2 Participants of the Study

The purposive sampling method, a nonprobability means of sampling, was used to identify the participants for the present study following a predetermined set of criteria in reading comprehension instruction. The participants were selected and nominated by their respective school principals. Only teachers of English, Science, and Math who have been teaching for at least three years were included in the predetermined list provided by the principals. The participants' rich and varied insights on reading comprehension instruction provided valuable results (Best & Kahn, 2003).

Following Best and Kahns' guidelines, this study was able to identify 121 respondents from different schools in the National Capital Region (NCR), particularly in Manila City, Quezon City, and Caloocan City. Forty-four (44) teacher-respondents were from Catholic Educational Association of the Philippines (CEAP) member schools, and 77 were from public elementary schools. Out of the 121 in-service teacher-participants, 32 from both private and public schools were selected for class observation. The rest participated as respondents of the survey.

2.3 Data-Gathering Procedure

Prior to data gathering, the researcher requested permission from the Office of the Secretary of Education, Department of Education (DepEd) Central Office to conduct the study in the divisions of Manila and Quezon City, NCR. Endorsement letters were acquired from the DepEd Central Office, the Regional Office, and the Division Offices. Upon acquiring approval from the Division Offices, coordination with principals in the different elementary schools was done based on the list provided by the Regional Office.

On the other hand, the respondents from private schools came from member schools of the Manila Archdiocesan and Parochial Schools Association (MAPSA). The schools from Manila and Caloocan were identified and included in the study. The approval and endorsement to conduct the study in the chosen schools were sought from the Office of the President of MAPSA.

To facilitate the data collection, the researcher personally conducted the distribution and retrieval of the survey questionnaires. The participants were asked to answer the questionnaire using a four-point Likert Scale (i.e., 4 – Always, 3 – Often, 2 – Rarely, and 1 – Never). Classes were also observed and video-recorded to capture the conduct of lessons. The reading experts were asked to view the videos and then fill out the Explicit Reading

Comprehension Instruction Observation Form adapted from Moore, Marinak, Henk, and Tomasetti's (2000) Reading Observation Framework.

2.4 Research Instruments

2.4.1 Pedagogical Beliefs, Pedagogical Content Knowledge, and Instructional Practices Questionnaire (PBPCKIPQ)

This instrument covered the general beliefs of K-5 and -6 elementary school teachers about teaching reading comprehension. The descriptors focused on the teachers' pedagogical beliefs and pedagogical content knowledge, which were based on their experiences as teachers in content areas. In particular, the PBPCKIPQ determined the teachers' amount of knowledge and full understanding of the strategies involved in comprehension strategy instruction.

The instrument used was drawn from Almasi's (2003) concept of strategic process instruction, which is consistent with Transactional Strategy Instruction and Direct Explanation (Duffy & Roehler, 1987). The instrument utilizes a four-point Likert scale measure, where 4 is interpreted to mean Always; 3, Often; 2, Rarely; and 1, Never. A coding system, which identifies the beliefs, pedagogical content knowledge, and instructional practices, was used in which items 1-7 are categorized under beliefs. These items refer to the in-service philosophies and perceptions on reading strategy comprehension instruction in the content-area classroom. Statements 8-14 pertain to the pedagogical content knowledge (PCK), which refers to the teacher's subject matter (content) knowledge and their general knowledge of reading pedagogy (instructional strategies). PCK includes identifying what teaching approaches fit the content and knowing how the elements of the content can be arranged for better teaching (Koehler & Mishra, 2009). Items 15-35 refer to the strategies and instructional activities or procedures of the teachers, which aim to help students learn how to coordinate and use a set of key comprehension strategies as they read a variety of texts.

To draw accurate conclusions, the survey questionnaire was validated and subjected to item analysis in which item-total correlation was employed (Downie & Heath, 1984). Such a process excluded the items irrelevant to the teachers' beliefs.

2.4.2 The Explicit Reading Instruction Lesson Observation Form (ERILOF)

In addition to the survey questionnaire, classroom observations were also conducted using a tool indicating the name of the teacher being observed, grade and section of the class being observed, the subject area or discipline, date of observation, and the stages in the conduct of the lesson as witnessed by the expert observer. The observation tool adapted from the Reading Lesson Observation Framework designed by Moore, Marinak, Henk, and Tomasetti (2000) enabled the researcher to record and evaluate the use of comprehension instruction strategies as they occur in the class observations. All items in the observation checklist were regarded as best practices in teaching reading comprehension based on the validated questionnaire. Codes were used according to Duke and Pearson's (2002) model

on comprehension instruction, which includes the following five components: Explicit Description of Strategy (EDS); Teacher and/or Student Modeling of the Strategy in Action (T/SMS); Collaborative Use of the Strategy in Action (CUS); Guided Practice Using the Strategy with Gradual Release of Responsibility (GPS); and Independent Use of Strategy (IUS).

The first component, EDS, is an explanation that focuses on what the strategy is, what knowledge is associated with it, why it is used in a given situation, why it is helpful in that situation, when can it be used, and how it is executed. Secondly, T/SMS shows the teachers' demonstration or modeling of the strategic process of performing a think-aloud of the strategy in use. Through this process, the teachers share with students the thinking process one must go through to approach a task and complete it (Almasi, 2003). The third component, CUS, brings the teachers and the students to work together and figure out how may they apply the strategies. The teachers discuss with their students why some of the information are rejected but are likewise settled in other information. The discussion of difficulties and finding out solutions to these difficulties also happen in this stage. The teachers further provide feedback and encouragement, intervene when students are unresponsive, and assume responsibilities for completing a task (Duke & Pearson, 2002). The fourth component, GPS, pertains to the teachers' and students' practice using strategic processing under instructional circumstances (Almasi, 2003). To prepare the students for assuming responsibilities, the teachers provide feedback and build opportunities to assess and evaluate their own strategy use following the Gradual Release of Responsibility model of instruction. The teachers slowly withdraw their support until the students become independent of the teacher (Duke & Pearson, 2002). Lastly, in using IUS, the students assume near-total responsibility for determining what the strategy is and how to apply it. It is in this phase that the students own strategy use in reading a text.

3. Results and Discussion

3.1 Pedagogical Beliefs, Pedagogical Content Knowledge, and Practices of Elementary School Teachers in Reading Comprehension Strategy Instruction

3.1.1 Pedagogical Beliefs in Reading Comprehension Strategy Instruction

As shown in Table 1, the public school teachers obtained the highest scores for items 2 (M=3.91, SD=0.29) and 1 (M=3.65, SD=0.55) in terms of pedagogical beliefs in comprehension strategy instruction as compared with the private school teachers' scores for items 4 (M=3.77, SD=0.42) and 1 (M=3.61, SD=0.61). Evidently, both groups of teachers believed that content-area teachers understand fully the features of comprehension strategies on predicting, questioning, identifying main ideas, and monitoring comprehension. Two other beliefs involve the awareness that comprehension strategies help students learn content in subject areas for public school teachers (M=3.91, SD=0.29) and the ability to bring about comprehension instruction tasks and routines in the classrooms for private school teachers (M=3.77, SD=0.56).

Based on the data, all indicators have the verbal interpretation of Always, which means that the teachers deemed that pedagogical beliefs are important characteristics that teachers of reading must posses and that these beliefs are essential factors in comprehension strategy instruction. It is more likely that the teachers embraced the belief that comprehension instruction is highly beneficial to their students, particularly when the students encounter complex texts in their content-area classrooms (Hall, 2005).

More importantly, as regards content area, the teachers believed that they were equipped with competencies in teaching reading. It can be implied that with the necessary teaching competencies, they may be able to provide the best comprehension strategy instruction. As they aspire to become competent in their respective reading classes, the content-area teachers may be bound to have sound decisions in their choice of appropriate activities that may have an impact on their teaching.

Table 1
Teachers' pedagogical beliefs in reading comprehension strategy instruction

Statement	**Private (n = 44)**			**Public (77)**			**Overall (121)**		
Content-area teachers . . .	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**
1. understand fully the features of comprehension strategies such as predicting, questioning, identifying main ideas, and monitoring comprehension.	3.61	0.61	Always	3.65	0.55	Always	3.64	0.57	Always
2. are aware that comprehension strategies can help students learn content in different subject areas.	3.59	0.56	Always	3.91	0.29	Always	3.86	0.41	Always
3. acquire knowledge of and skills in teaching comprehension at the pre-service levels.	3.57	0.50	Always	3.47	0.62	Always	3.50	0.58	Always
4. believe in their ability to bring about comprehension instruction tasks and routines in the classrooms.	3.77	0.42	Always	3.61	0.51	Always	3.67	0.49	Always

Table 1 continued...

Statement	Private (n = 44)			Public (77)			Overall (121)		
Content-area teachers . . .	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**
5. use reading comprehension strategies in the teaching of their disciplines.	3.43	0.62	Always	3.56	0.59	Always	3.51	0.60	Always
6. practice a combination of comprehension strategies in making learners understand texts.	3.55	0.58	Always	3.61	0.54	Always	3.59	0.56	Always
7. have an awareness of the principles of comprehension instruction that guide them in their teaching.	3.41	0.58	Always	3.52	0.55	Always	3.48	0.56	Always
Overall	**3.59**	**0.07**	**Always**	**3.62**	**0.1**	**Always**	**3.61**	**0.06**	**Always**

It seemed that the teachers' pedagogical beliefs were revealed in their practice of comprehension strategy instruction (Borg, 2003; Gunning, 2006; Roe, Stoodt-Hill, & Burns, 2007). This implies that whatever the teachers do in the classroom can be traced through their pedagogical beliefs, which have been shaped through the years of personal experiences, perceptions of their students, curriculum changes, and definitions of teachers' knowledge of general teaching strategies. These beliefs influenced the teachers' planning and delivery of instruction.

In contrast, the private school teachers had the lowest scores for items 7 (M=3.41, SD=0.58) and 5 (M=3.43, SD=0.62), while the public school teachers had the lowest scores for items 3 (M=3.47, SD=0.62) and 7 (M=3.52, SD=0.55). Both groups of teachers had a relatively less awareness of the principles of comprehension instruction that can guide them in their teaching; however, they differed in beliefs on items 5 (i.e., teachers use reading comprehension strategies in the teaching of their disciplines) and 3 (i.e., teachers acquire knowledge and skills in teaching comprehension at the pre-service levels).

The data revealed that while the two groups of teachers gave importance to comprehension strategy instruction, they were not very much aware of the principles behind comprehension instruction and least believed that they acquired the knowledge and skills in teaching during their pre-service training. It is more likely that while lower ratings were assigned to some beliefs, the teachers still maintain that they demonstrated the characteristics and qualities of content-area teachers as reflected in the verbal interpretation of Always and the overall score (M=3.61, SD=0.06). However, it can be inferred that as teachers gained experience, they may have deteriorated in teaching reading strategies (Frayel, 2007). This can be attributed to the teacher-held belief that comprehension instruction is the responsibility of the English teacher alone (Hall, 2005; Spencer, Carter, Boon, & Simpson-Garcia, 2008);

thus, an ambiguous understanding on the role of a content-area teacher is indicated in their least important beliefs on teaching strategies. It is also likely that whatever foundations the teachers had during their pre-service training were not within their beliefs. Thus, it can be assumed that the teachers' personal beliefs about comprehension strategy instruction can reveal the sufficiency or insufficiency of knowledge they gained from the pre-service training (Biancarosa & Snow, 2004; Hall, 2005).

3.1.2 Pedagogical Content Knowledge in Reading Comprehension Strategy Instruction

Table 2 indicates the teachers' reported pedagogical content knowledge in reading comprehension strategy instruction. The data show that both groups of teachers had the same two highest pedagogical content knowledge items. In particular, items 1 and 2 obtained the verbal interpretation of Always for private school teachers (M=3.64, SD=0.57; and M= 3.61, SD=0.53, respectively) and for public school teachers (M=3.52, SD=0.57; and M=3.48, SD=0.5, respectively). Further, it can be gleaned from the data that the private school teachers had a higher score compared with their counterpart. Nevertheless, both groups of teachers gave importance to comprehension strategy instruction by integrating reading strategies in their lessons and determining what, how, when, and why these strategies should be observed when processing a text. The two top choices of pedagogical content knowledge conformed to the teachers' pedagogical beliefs in understanding the features of comprehension strategies and these teachers' awareness that such helps students in learning content subjects. It seems that the teachers are familiar with declarative, procedural, and conditional knowledge in comprehension strategy instruction (Almasi, 2003; Archer & Hughes, 2011; Duke & Pearson, 2002). Thus, it is possible that the two groups of teachers are knowledgeable of what particular teaching approaches fit the content and how the elements of content can be arranged, as guided by their pedagogical content knowledge in different areas.

Table 2
Teachers' pedagogical content knowledge in reading comprehension strategy instruction

Statement	Private (n = 44)			Public (77)			Overall (121)		
Content-area teachers . . .	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**
1. prepare lessons integrating comprehension strategies with their teaching.	3.64	0.57	Always	3.52	0.57	Always	3.56	0.57	Always

Table 2 continued...

Statement	Private (n = 44)			Public (77)			Overall (121)		
Content-area teachers . . .	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**
2. understand comprehension strategies as to what, how, when, and why they should be observed in processing a text.	3.61	0.53	Always	3.48	0.50	Always	3.53	0.52	Always
3. provide grounds or reasons for employing the strategy.	3.30	0.59	Always	3.31	0.61	Always	3.31	0.61	Always
4. prompt students if their understanding fails.	3.48	0.58	Always	3.40	0.65	Always	3.43	0.63	Always
5. demonstrate to the students as to when and where to apply a strategy in processing a text.	3.39	0.68	Always	3.32	0.57	Always	3.35	0.65	Always
6. explain the impact of the strategy on the understanding of a text.	3.43	0.62	Always	3.29	0.66	Always	3.34	0.62	Always
7. justify that certain comprehension strategies are suitable for a particular goal.	3.48	0.58	Always	3.39	0.54	Always	3.42	0.56	Always
Overall	**3.48**	**0.04**	**Always**	**3.39**	**0.08**	**Always**	**3.42**	**0.05**	**Always**

However, the least pedagogical content knowledge was item 6 (M=3.29, SD=0.66) for public school teachers, while item 3 (M=3.30, SD=0.59, for private school teachers; M=3.31, SD=0.61, for public school teachers) was almost common to both groups of teachers. The results revealed that the public school teachers had the least pedagogical content knowledge as regards explaining 'the impact of the strategy on the understanding of a text,' while the private school teachers had the least pedagogical knowledge on demonstrating to the students 'as to when and where to apply a strategy in processing a text.' Moreover, both groups of teachers had the least idea on providing 'grounds or reasons for employing a strategy.' This may imply that the teachers' relatively little pedagogical content knowledge limits their use of comprehension strategies in their instruction. It is likely that they do not give explanations that focus on what strategy is used, what knowledge is associated with it, why it is being used, and how it is performed (Almasi, 2003; Archer & Hughes, 2011; Duke & Martin, 2008;

Williams, 2008). The findings also revealed that the teachers' least choices conflicted with their pedagogical beliefs. It seemed that the teachers had a superficial understanding of the basic principles of comprehension strategy instruction, which contradicts the characteristics of a content-area teacher who should be engaged in strategy instruction.

3.1.3 Practices of Elementary School Teachers in Reading Comprehension Strategy Instruction

Table 3 indicates that the private school teachers had higher scores for items 9 (M=3.75, SD= 0.43) and 12 (M=3.73, SD=0.45), while the public school teachers had lower scores for items 21 (M=3.62, SD=0.51) and 9 (M=3.61, SD=0.54). This would imply that both groups of teachers have always practiced instruction by identifying unfamiliar words or phrases in a text and uncover their meanings using context clues. Moreover, the private school teachers gave more attention to pictures and diagrams in a text to resolve comprehension breakdowns, whereas the public school teachers gave more emphasis on carefully selecting texts appropriate to the reading level of the students.

Table 3
Instructional practices of teachers

Statement	Private (n = 44)			Public (77)			Overall (121)		
Content-area teachers . . .	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**
1. establish a specific goal for a reading episode, e.g., to learn new information about a topic, to enjoy a story by a favorite author, to review key concepts for an upcoming test.	3.50	0.62	Always	3.42	0.63	Always	3.45	0.63	Always
2. activate background knowledge of students before reading a text and linking background knowledge to text content while reading.	3.52	0.58	Always	3.40	0.61	Always	3.45	0.60	Always
3. teach the most important information in the text and distinguish important text content from insignificant content.	3.68	0.51	Always	3.49	0.57	Always	3.56	0.56	Always

Table 3 continued...

Statement	Private (n = 44)			Public (77)			Overall (121)		
Content-area teachers . . .	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**
4. make predictions on what will happen in an upcoming segment of a text.	3.55	0.66	Always	3.40	0.56	Always	3.45	0.60	Always
5. evaluate and revise these predictions as new information is encountered.	3.30	0.55	Always	3.19	0.56	Often	3.23	0.56	Often
6. ask questions (of oneself) while reading.	3.43	0.58	Always	3.38	0.65	Always	3.40	0.62	Always
7. identify potentially confusing words or phrases in a text and use contextual information or other resources to figure out what they mean.	3.70	0.55	Always	3.53	0.57	Always	3.60	0.57	Always
8. identify confusing segment of texts and use a variety of strategies to clear them up.	3.50	0.62	Always	3.45	0.59	Always	3.47	0.60	Always
9. identify unfamiliar words or phrases in a text and uncover meaning through context clues.	3.75	0.43	Always	3.61	0.54	Always	3.66	0.51	Always
10. preview or skim a text to form a preliminary understanding of the content that will be encountered.	3.41	0.58	Always	3.42	0.59	Always	3.41	0.58	Always
11. notice inconsistencies or contradictory statements in a text.	3.23	0.52	Often	3.18	0.68	Often	3.20	0.62	Often

Table 3 continued . . .

Statement	Private (n = 44)			Public (77)			Overall (121)		
Content-area teachers . . .	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**
12. pay attention to pictures and diagrams presented in a text to enhance understanding or to resolve comprehension breakdowns.	3.73	0.45	Always	3.55	0.59	Always	3.61	0.55	Always
13. create mental images of text content.	3.50	0.58	Always	3.39	0.63	Always	3.43	0.61	Always
14. infer and draw conclusions from unstated information.	3.45	0.58	Always	3.31	0.61	Always	3.36	0.60	Always
15. identify the structural and organizational flow of a text and use this information to guide one's reading.	3.36	0.61	Always	3.22	0.70	Often	3.27	0.67	Always
16. create graphic representations of text content (story maps, concept maps, flow charts).	3.48	0.66	Always	3.27	0.64	Always	3.35	0.65	Always
17. identify breakdowns in text-level understanding while reading.	3.16	0.60	Often	3.26	0.52	Always	3.22	0.55	Often
18. synthesize the most important information in a text, either by stopping periodically while reading or by reviewing text content after reading.	3.45	0.54	Always	3.42	0.54	Always	3.43	0.54	Always
19. demonstrate a strategic process or perform a think-aloud of the thoughts that occur while reading and using strategies.	3.48	0.54	Always	3.35	0.55	Always	3.40	0.55	Always

Table 3 continued . . .

Statement	Private (n = 44)			Public (77)			Overall (121)		
Content-area teachers . . .	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**	**Mean**	**SD**	**Verbal Interpretation**
20. provide students with substantive feedback so they may have opportunities to practice the strategy use.	3.36	0.64	Always	3.45	0.55	Always	3.42	0.59	Always
21. select texts carefully to ensure appropriacy to the reading level of the students..	3.57	0.54	Always	3.62	0.51	Always	3.60	0.52	Always

It can be inferred that both groups of teachers emphasize the importance of context clues and graphics as aids or prompts when presenting new words and concepts. The high mean ratings given to these items indicate that the teachers practice vocabulary strategies instruction as one essential factor in developing comprehension. The strong connection between vocabulary knowledge and reading comprehension has long been established in comprehension instruction (Sedita, 2005; Vacca & Vacca, 2005). In most instances, students experience difficulty in comprehension because they lack strong vocabulary competencies in the content-area classroom. With a heavy concept load on content-specific and academic vocabulary to be learned by the students, vocabulary instruction becomes the responsibility of content-area teachers (Richardson, Morgan, & Fleener, 2012). Moreover, teachers can also help their students extract information from graphic aids in texts, paying attention to visual displays that let the students picture and remember word relationships. These visuals enhance vocabulary strategies whenever readers associate with images the experiences, actions, and dialogues in a text (Gee, 2008; Gunning, 2003). It is likely that the teachers have the necessary competencies to teach vocabulary to increase their student's comprehension of content materials. The results also show that the teachers may give importance to word and conceptual knowledge, and conceptual relationships (Roe, Stoodt-Hill, & Burns, 2007) by providing instructional activities for vocabulary development.

In contrast, the least instructional practices done by the teachers were items 17 (M=3.16, SD=0.60) for the private school teachers, and 5 (M=3.19, SD=0.56) for the public school teachers. Almost equally given the lower score was item 11 (M=3.18, SD=0.68 for public school teachers; M=3.23, SD=0.52 for private school teachers). It can be gleaned from the data that the teachers only often (a) implement instructional practices such as identifying breakdowns in text-level understanding while reading, (b) evaluate and revise predictions as new information is encountered, and (c) notice inconsistencies or contradictory statements in a text. Moreover, it can be inferred that both groups of teachers do not fully implement most of the valued strategies in comprehension instruction. They may recognize that their students need additional strategies, but such does not ensure that they will embrace

the task of teaching the strategies they perceived themselves to be knowledgeable about, thus, resulting in problems and disappointments. The results imply that both groups of teachers may encounter difficulties because of their limited knowledge about procedures in comprehension strategy instruction. They may lack the knowledge necessary for teaching vocabulary and comprehension. One reason for this is that teachers may spend less time explicitly teaching vocabulary, which can be traced from their pre-service orientation (Emily, Kennedy, Pullen, Williams, & Hirsch, 2011). Such concurs with the findings from the study of Bowne, Yoshikawa, and Snow (2015), which found that teacher-education programs might not provide pertinent information required in teaching reading. The teachers' ability to understand and implement these teaching techniques is likely to shape the effectiveness of their instruction in improving their students' vocabulary.

3.2 Teachers' Practices in Reading Comprehension Strategy Instruction as Observed by Experts

Table 4 shows that items 9 and 7 are the top-ranking explicit practices in reading strategy instruction with a verbal interpretation of Observed (M=2.97, SD=0.69; M=2.95, SD=0.46); item 9 (i.e., 'the teacher designed/selected practice activity/task that allows the students to work collaboratively') is the most observed, followed by item 7 (i.e., 'the teacher guided the students in performing the strategy by providing them with adequate range of examples through physical, verbal, or visual prompts'). Both items with the same verbal interpretation imply that the experts' observed explicit reading comprehension strategy instruction was of satisfactory quality. It is possible though that the teachers encountered difficulty in implementing comprehension strategy instruction, which can be traced from their inability to use specific techniques and procedures in providing their students with explicit explanations on how to think their way through the text (Hall, 2005). What students cannot do in applying a strategy is a reflection of the teachers' inability to explain, demonstrate, and provide necessary activities. The teachers' lack of ability to handle comprehension instruction disputes the assumption that all teachers can conduct effective instruction. Ideally, teachers are adaptive and responsive, apply re-teaching, illustrate the depth of comprehension lessons, provide quality-learning environments, and know how to motivate and monitor students (Parris & Block, 2007). In most cases, the professional development of teachers begins with confusion or rejection before taking conscious control of teaching strategies by naming them and telling students why they are important. Eventually, the students learn to model the strategies and texts together (Block & Duffy, 2008).

On the other hand, the two least observed practices identified by the experts were items 5 (M=2.03, SD=0.76) and 2 (M=2.14, SD=0.57); thus, modeling and think aloud, and clear explanation about the strategy and guided practice of strategy use were not evident. While such results contradict the teachers' pedagogical beliefs in their reading comprehension strategy instruction, the verbal interpretation of Recommended would imply that the said strategies were either not observed or were judged to be of unsatisfactory quality. This further proves that the participants of the present study may only have some degree of familiarity

with the concept of reading comprehension strategies, which may have resulted in the lack of competencies in reading comprehension strategy instruction. Such a context outweighs the pedagogical beliefs they integrate in their lessons (Block & Parris, 2008; Calderhead, 1996; Kuzborska, 2011; Vacca & Vacca, 2005). With the heavy and complex load in content-area classrooms emerges "the need for professional updating to continuously develop teacher quality" (UNESCO, 2015, p. 53).

Table 4
Teachers' practices in reading comprehension strategy instruction as observed by experts

Indicator	Mean	SD	Verbal Interpretation
1. The teacher began the lesson with a clear statement of the lesson's goals and expectations.	2.57	0.72	Observed
2. The teacher provided a clear explanation about the structure of the skill or strategy to be learned and described when, why, and how it could be used.	2.14	0.57	Recommended
3. The teacher clarified and verified students' understanding of the strategy.	2.31	0.62	Recommended
4. The teacher shared inner thoughts by modeling the thinking process to demonstrate the strategy being taught.	2.44	1.99	Recommended
5. The teacher modeled fluent reading then asked the students to think aloud about sections in the text.	2.03	0.76	Recommended
6. The teacher guided the students to confirm or disprove predictions they made about a text.	2.28	0.79	Recommended
7. The teacher guided the students in performing the strategy by providing them with adequate range of examples through physical, verbal, or visual prompts.	2.95	0.46	Observed
8. The teacher and the students used multiple strategies, rather than using only one strategy at a time before, during, and after reading.	2.54	0.73	Observed
9. The teacher designed/selected a practice activity/task that allows the students to work collaboratively.	2.97	0.69	Observed
10. The teacher directed the students to generate higher level thinking questions about the text.	2.67	0.61	Observed
11. The teacher continually monitored students' comprehension and provided appropriate feedback.	2.83	0.47	Observed

Table 4 continued...

Indicator	Mean	SD	Verbal Interpretation
12. The teacher constantly monitored students' understanding of their engagement in the lesson to make sure that they are deriving meaning from instruction.	2.90	0.44	Observed
13. The teacher provided opportunities for the students throughout the lesson to self-monitor and directed their comprehension and participation.	2.65	0.50	Observed
14. The teacher regulated the amount of help provided to students based on the difficulty level of the strategy being taught.	2.64	0.56	Observed
15 The teacher asked students to perform the strategy without prompts.	2.49	0.58	Recommended
16. The teacher implemented self-directed activities for students to work independently with little teacher direction.	2.67	0.59	Observed

3.3. Comparison between Public and Private School Teachers' Pedagogical Beliefs, Pedagogical Content Knowledge, and Instructional Practices

Table 5 gives the summary of the comparison between the public and the private school teachers' pedagogical beliefs, pedagogical content knowledge, and instructional practices. For pedagogical beliefs, the mean score of the private school teachers is 3.59 with the standard deviation of 0.36, while the mean score of the public school teachers is 3.62 with the standard deviation of 0.36.

Table 5
Comparison between public and private school teachers' pedagogical beliefs, pedagogical content knowledge, and instructional practices

Variable	School	Mean	SD	Mean Difference	t-value	p-value	Interpretation
Pedagogical Beliefs	Private	3.59	0.36	0.030	-0.440	0.661	Not significant
	Public	3.62	0.36				
Pedagogical Content Knowledge	Private	3.47	0.42	0.087	1.160	0.248	Not significant
	Public	3.39	0.38				
Instructional Practices	Private	3.48	0.34	0.086	1.261	0.210	Not significant
	Public	3.40	0.37				

The mean difference between the two scores is 0.030 in which the computed t-value is -0.440 with the p-value of 0.661. As regards pedagogical content knowledge, the mean score of the private school teachers is 3.47 with the standard deviation of 0.42, while the mean score of the public school teachers is 3.39 with the standard deviation of 0.38. The mean difference between the two scores is 0.087 in which the computed t-value is 1.160 with the p-value of 0.248. For instructional practices, the mean score of the private school teachers is 3.48 with the standard deviation of 0.34, while the mean score of the public school teachers is 3.40 with the standard deviation of 0.37. The mean difference between the two scores is 0.086, and the computed t-value is 1.261 with the p-value of 0.210 at 0.05 level of significance.

Evidently, there is no significant difference between the public and the private school teachers' responses in terms of their pedagogical beliefs, pedagogical content knowledge, and instructional practices. This finding implies that both sets of elementary school teachers have the same pedagogical beliefs, pedagogical content knowledge, and instructional practices.

Content-area teachers' beliefs, knowledge, and competencies, therefore, are crucial in reading comprehension strategy instruction in different disciplines. The teachers' instructional choices are based on their knowledge of teaching strategies and their thoughts, attitudes, beliefs about teaching and learning, perceptions of students, educational background, personal and classroom experiences as learners, and concept of teacher roles. These factors are indicators of classroom practices, decisions, and choice of materials and activities (Borg, 2003; 2009; Gunning, 2006; Handal & Herrington, 2003; Pajares, 1992). Whatever instructional strategies and procedures the teachers choose depend on the pedagogical beliefs and pedagogical knowledge they have gained through the years. It is likely that all K-5 and -6 teachers in this study may or may not have undertaken explicit comprehension strategy instruction and may have the same professional needs in terms of pedagogy training in content areas.

3.4 Correlation among the Pedagogical Beliefs, Pedagogical Content Knowledge, and Instructional Practices of Elementary School Teachers in Reading Comprehension Strategy Instruction

Table 6 summarizes the correlation among the pedagogical beliefs, pedagogical content knowledge, and instructional practices of private and public school in-service teachers. Based on the data, pedagogical beliefs and instructional practices obtained a correlation coefficient of 0.574 with the p-value of less than 0.05. Further, pedagogical content knowledge and pedagogical beliefs had a correlation coefficient of 0.609 with the p-value of less than 0.05, while pedagogical content knowledge and instructional practices obtained a correlation coefficient of 0.646 with the p-value of less than 0.05. At 0.05 level of significance, the three variables are significantly correlated to one another.

Table 6
Correlation among pedagogical beliefs, pedagogical content knowledge, and instructional practices

Pair of Variables	Correlation Coefficient	p-value	Interpretation
Pedagogical Beliefs and Instructional Practices	0.574	0.000	Significant
Pedagogical Content Knowledge and Pedagogical Beliefs	0.609	0.000	Significant
Pedagogical Content Knowledge and Instructional Practices	0.646	0.000	Significant

Based on the findings, it can be inferred that what the teachers believed is manifested in their pedagogical content knowledge and instructional practices. In addition, these beliefs are factors that relate to the teachers' pedagogical content knowledge and instructional practices. These pedagogical beliefs likewise shape the nature of the teachers' instructional practices, and their goals, procedures, materials, classroom-interaction patterns, and roles as content-area teachers influence their decisions. Moreover, such beliefs, along with knowledge of content pedagogy, are aligned with the teachers' instructional framework, which is essential for professional growth (Ulusoy & Dadeoglu, 2011).

4. Conclusion

The results obtained from this study indicated the content-area teachers' beliefs and the importance of pedagogical content knowledge in reading comprehension strategy instruction. Such findings provided information about the influence of beliefs and pedagogical content knowledge on practices in teaching comprehension strategies.

The in-service teachers in the present study believe that pedagogical beliefs are important characteristics content-area teachers must possess. The teachers value their competencies to conduct comprehension strategy instruction by integrating reading strategies in their respective lessons. Their pedagogical beliefs conform to their pedagogical content knowledge; this means they are aware that comprehension strategy instruction helps students in learning content. Their responses also indicate that they are familiar with the declarative, procedural, and conditional knowledge of comprehension strategy instruction and the possible application of this knowledge in the classroom. In planning and delivering instruction, the teachers know what particular teaching approaches and procedures fit the content as guided by their pedagogical content knowledge. This pedagogical content knowledge is greatly influenced by their beliefs, which can be traced from their personal and professional years of teaching experiences.

However, both groups of teachers have least awareness on the principles of comprehension instruction, which seems inconsistent with their pedagogical beliefs in teaching comprehension strategies. Such an ambiguous understanding of comprehension strategy instruction refutes the belief that content-area teachers fully understand the features of comprehension strategies and that this competently brings about comprehension instructional tasks and routines. The results of the study revealed that teachers have limited declarative, procedural, and conditional knowledge of comprehension strategy instruction, which limits their use of comprehension strategies in instruction. This inadequacy reflects the teachers' superficial understanding of the basic principles of comprehension strategy instruction; and this contradicts the characteristics of a content-area teacher who should be competently engaged in strategy instruction. Such a context was clearly observed in the classroom practices of the teachers.

Classroom observations show that the teachers have limited use of comprehension strategies in their lessons. They emphasize implicit instructions using pictures, graphs, and diagrams to resolve comprehension breakdowns. Vocabulary strategy instruction is limited to context clues and graphics as aids or prompts when presenting new words and complex concepts. Although vocabulary instruction is essential to comprehension instruction, explicit comprehension strategy instruction is needed by students to fully understand a complex text with a heavy concept load on content-specific and academic vocabulary.

The teachers' observed instructional practices seem not to apply the most valued strategies in comprehension strategy instruction. The teachers recognize that students need additional strategies, but they do not practice the strategies they perceived themselves to be knowledgeable about because of their limited knowledge of teaching procedures. This situation results in instructional difficulties and restraints in applying comprehension strategy instruction. The experts' observations further prove the inadequacy of comprehension strategies used by the teachers. The unsatisfactory rating reveals the inability of the teachers to use varied techniques and procedures with explicit explanations. Also, pedagogical content knowledge (i.e., declarative, procedural, and conditional) is not evident based on classroom observations. This clearly shows that the teachers encounter difficulty in implementing comprehension strategy instruction and that they lack the competencies in doing such.

The study also found that the two groups of teachers have the same pedagogical beliefs, pedagogical content knowledge, and instructional practices. The correlation likewise implies that the teachers' beliefs relate to their pedagogical content knowledge and instructional practices, which have shaped the nature of their instructional methods. Together with knowledge of content pedagogy, the teachers' beliefs are also aligned with the instructional framework. The students from both private and public schools have received the same comprehension strategy instruction based on their teachers' beliefs and knowledge of pedagogy in content areas.

The findings of the study imply that the K-5 and -6 teachers in the present study should strengthen their competencies in reading comprehension strategy instruction. As pedagogical beliefs greatly influence pedagogical content knowledge and practices, the teachers should keep themselves abreast of recent literature and research-based teaching

techniques and procedures as inputs for better practice. Exposing the teachers to new models, frameworks, and curriculum materials allows novel ideas and concepts to emerge, which could aptly be translated into comprehension strategy instruction practices. In addition, continuing professional development (CPD) such as participation in seminars, conventions, and trainings on comprehension strategy instruction can help develop the professional knowledge and skills of the teachers. Such inputs can guide the teachers in planning instruction, identifying fix-up strategies, employing proper time management, selecting strategies to meet content goals and student needs, and determining appropriate scaffolding strategies to name a few. Moreover, though CPD, the teachers can access pedagogical content knowledge such as teacher modeling, scaffold instruction, collaborative models, vocabulary instruction, and repertoire of reading strategies.

The study further implies a call for a school-wide collaboration among administrators, content-area teachers, and reading experts. This can provide opportunities for small- or large-group professional discussions, conversations, and deliberations on instructional problems encountered in teaching comprehension. As teachers work with fellow teachers and school administrators, new perspectives on curriculum, evaluation and assessment, latest research, and gaps in comprehension strategy instruction are known.

Another pedagogical implication drawn from this study directs to teacher-education program and recruitment of teachers. To prevent the problems of in-service teachers not being able to apply comprehension strategy instruction, pre-service teachers are expected to have the competencies in executing reading comprehension strategy instruction. New teachers must demonstrate a firm background of comprehension strategy instruction by being familiar and knowledgeable on how content areas and reading overlap. Certain demands on content teachers are expected to properly implement comprehension strategy instruction in different domains. This can be accomplished through a teacher-education curriculum that addresses the demands of the 21st-century education landscape. The curriculum must require pre-service teachers to be high-level knowledge educators who can manage complex ways of thinking. Likewise, the teacher-education curriculum should give emphasis on teaching reading comprehension, especially in content areas.

The results of this study, which identified the pedagogical beliefs, pedagogical content knowledge, and instructional practices of K-5 and -6 content-area teachers, pose challenges for teachers, administrators, and experts in the discipline. The present research shows the competencies of content-area teachers with regard to comprehension strategy instruction. It also reflects the need for competent teachers and continuing professional development. With the recent trends in the 21st-century education, producing high-quality reading teachers becomes more crucial.

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