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## **TEACHERS' KNOWLEDGE AND SKILLS IN PHONOLOGICAL AWARENESS IN UNITED ARAB EMIRATES**

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*The purpose of this study was to examine teachers' knowledge and skills in phonological awareness (PA). The sample included 145 teachers teaching first to 3<sup>rd</sup> grade elementary public schools in United Arab Emirates (UAE). A valid and reliable instrument was developed together the data. The instrument included to major sections; knowledge and skills. Each section included 18 items relevant to PA.*

*Results of this study showed that teachers, unfortunately, are not prepared adequately in this important subject matter i.e. PA. In general, teachers demonstrated low levels of knowledge and skills in phonological skills regardless of their training and whether they teach regular or special needs students.*

Phonological Awareness (PA) plays a fundamental role in reading development. Researchers in the field of reading and reading instruction have paid so much attention to phonological awareness and its role in and improving reading and writing skills. Phonemic awareness can be taught and learned, and children benefit from direct instruction in phonemic awareness and explicit in systematic phonics (Armbruster, Lehr, & Osborn, 2001). In fact, almost 50% of children will fail to learn to read from instructional strategies that assure the ability to intuit the alphabetic principle (Honig, 1997). A considerable amount of research has linked reading readiness and reading achievement to phonological awareness. Indeed, a large body of literature concluded that there is a causal relationship between PA & students' spelling and reading achievement (Ball, 1993; Ball & Blachman, 1991; Bradley & Bryant, 1983, & 1985; Torgesen, 1997; Liberman, Shankweiler & Liberman, 1989). Phonological awareness refers to one's awareness and ability to manipulate the phonology of a particular language. Literature has clearly stated that PA is children's conscious understanding that speech is composed of individual phonemes. (Snider, 1995; Liberman, Sharkweiler, & Liberman, 1989; Moats, 1994).

Reading itself is a complex cognitive activity with a variety of interactive processes and skills. One of the most important prerequisites for reading is knowledge of the alphabetic system (Adams, 1990; Brady, Fowler, Stone & Winbury, 1986). It has been stated by many researchers that child's knowledge of the alphabetic code is important for both reading and writing

development. Also, child's failure in letter knowledge or even slowed naming of the alphabets result in failure in reading and writing (Adams, 1990; Share & Stanovich, 1995; Berninger, 1995).

Some researchers indicated that about 20 to 25% of all children in the United States experience literacy difficulties (Lyon 1995; Shaywitz, Fletcher, & Shaywitz 1994; Shaywitz, 1996). Lyon (2003) also noted that the majority of reading difficulties in the United States results from poor reading instruction coupled with lack of appropriate early identification and intervention. Children's knowledge of letter-sound correspondences and preparation in PA skills are good predictors of child's success or failure in reading. At the same time, research literature has widely addressed the positive effect of systematic instruction in PA and letter-sound correspondences or early reading and spelling skills. In addition, early intervention and spelling skills in PA has been documented to result in a reduction of the number of students who are facing reading difficulties or at risk for reading failure (Ball, 1993; Bradley & Bryant, 1985; Vellutino & Scanlon, 1988). Without systematic instruction and intervention in PA and alphabet knowledge, however, most of children with poor literacy skills remain poor readers. Juel (1988) and Torgesen (1998) have documented that first graders who experience difficulties in reading remain poor readers in fourth grade. It is important to note that poor readers do not improve with age. Indeed, the effects of poor reading are cumulative over time. Further, longitudinal studies reported that 74% poor readers in 3<sup>rd</sup> grade remained poor readers in 9<sup>th</sup> grade (Francis, Shaywitz, Stuebing, Shaywitz & Fletcher, 1996). However, the most common cause of difficulties in the development of early word reading is a weakness in the child's ability to process the phonological features of language Liberman, Shankweiler, & Liberman, (1989).

Indeed as Moats (1994) had stated *Lower level language mastery is as essential for the literacy teacher as anatomy is for the physician*. All teachers of elementary grades face the task of teaching children to read and write, therefore, teachers need to have knowledge about the language elements and how these elements are represented in writing. For e.g., teachers need to know the alphabetic principle, phoneme-grapheme correspondences, and how the language is constructed. In addition, teachers need to be able to implement a variety of activities in classroom instruction of PA. Lacking teachers with adequate knowledge of the language structure is a crisis in education. Teachers must be prepared with adequate knowledge, be able to apply this knowledge to tasks of PA and a variety of instructional strategies to teach PA. This is because phonemic awareness is the result of direct and explicit instruction and not age or maturation. Moats & Foorman (2003) stated only a few studies have documented what teachers know about language and reading and how they practice their knowledge in teaching reading to youngsters. Every elementary-grade teacher must be well versed in his/her language structure. In addition, the first grade teachers can always help in the identification and later on intervention of students who exhibit difficulties in reading and reading related skills.

Having stated all the above, it is of crucial importance to note that teachers need to have positive perceptions about the role of systematic instruction in phonological awareness and possess knowledge and skills about one's native language structure.

The purpose of this study was to extend the research literature on teachers' knowledge and skills of phonological awareness by providing an international perspective. Specifically, the goals of this investigation were (1) to examine whether general education teachers in the United Arab Emirates (U.A.E.) have the knowledge and skills necessary to teach phonological awareness to their students; (2) to compare the knowledge and skills U.A.E. teachers have in PA based on whether they have had training in PA skills before or not; (3) to compare the knowledge and skills U.A.E. teachers have in PA based on whether they have taught students with learning disabilities

before or not; (4) to compare the knowledge and skills U.A.E. teachers have based on the grade level they teach.

### **Method**

#### *Sample*

Participants included 145 general education teachers who were teaching students in first to third grades in government schools in the United Arab Emirates. All participants were female teachers. (30%) of the teachers were teaching first grade students, (43%) were teaching second grade students, and (27%) were teaching third grade students.

With regard to their years of experience, (29%) have 1-3 years of experience, 24% have 4-6 years of experience, (21%) have 7-9 years of experience, and (26%) have more than 10 years of experience. Teachers' experiences in teaching students with learning disabilities were varied. 38% indicated that they have taught students with learning disabilities before, whereas (62%) indicated that they have not taught students with learning disabilities before. As for teachers receiving training in phonological awareness, 30% indicated that they have had training in phonological awareness skills, however 70% indicated that they did not have any training regarding phonological awareness skills.

#### *Instrument*

Teachers were asked to provide personal and professional demographic information (i.e., grade level presently teaching, years of teaching experience, whether they have taught students with disabilities before or not, and whether they have had training in phonological awareness before or not).

A teacher rating scale of 18 items was used. Each item under the knowledge section has a corresponding item under the skill section. The instrument was developed based on the researcher's thorough review of the literature on phonological awareness. Participants were asked to rate each of the 18 items under knowledge and the 18 items under skills based on a four point Likert-type scale. Ratings ranged from 1 = Know a lot to 4 = Do not know at all. Cronbach alpha was used to investigate the reliability of the scale. Results were (.94) which indicates a high rate of reliability.

To ensure the validity of the instrument, it was given to six faculty members in the Special Education department at the United Arab Emirates for review. It was also given to 15 special and general education specialists (e.g. teachers, supervisors) for review. Their feedback was taken into consideration and some questions in the tool were reworded for clarity. Also, construct validity was conducted based on thorough review of literature on reading and phonological awareness. Each concept of PA was represented by 1 item on each question section. That is, many of the PA concepts that exist in the literature were itemized individually when building the current instrument. The total number of items under knowledge and skills section is 18 & 36 each under section.

The survey instrument was administered with the permission and assistance of the Ministry of Education in three regional school districts in the United Arab Emirates (UAE). A total of 200 surveys were sent with students from the College of Education at the UAE students received training sessions in order to assist teacher to administer the tool of the study. They were asked to distribute the questionnaire with a letter assuring teachers confidentiality and anonymity. The completed questionnaires were returned to the author over a period of two consecutive weeks. A total of 167 questionnaires were returned. Out of the total returned questionnaire, 22 of them were

not included in the study because of missing information. The final sample that was used in the study was 145 participants, which represented about 73% of those distributed.

### *Results & Discussion*

Table 1 shows the total means of teachers' knowledge and skills. The mean for teachers' total knowledge (1.77) was lower than the mean of teachers' total skills of (2.07). This result is surprising because it has been stated in the literature that knowledge is theory-based whereas skills require practice. For example, Bandura (1989), stated that *Possessing knowledge does not necessarily mean one can practice it*. This result may be due to the fact that knowledge in PA and its instructional strategies are not included in the programs they study at the University level. However, teachers receive training during their inservice practice which is reflected in the current results.

According to both means it is worth noting that teachers in general seem to lack both knowledge and skills related to nursery rhymes and songs. This may be due to the fact that teachers in their education program are not prepared enough nor trained to practice or apply such skills (Lyon, 2003; Moats, 2003). In addition, children's curricula of the elementary stage are not designed to include activities related to phonological awareness such as rhymes.

**Table 1**  
**Means and Standard Deviations of Teachers' Knowledge and Skills**

Area	Mean	SD
Knowledge	1.77	.67
Skills	2.07	.64

Regarding the means for each item on the knowledge scale Table 2 shows that teachers possess knowledge in a wide range of content areas with most knowledge in items # 6, 7 & 17 and lowest

**Table 2**  
**Means and Standard Deviations for each item under Knowledge and Skills**

Knowledge/ Item #	Mean	SD		Skill/ Item #	Mean	SD
5	2.03	.84		5	2.37	.96
10	1.92	.97		11	2.26	.97
11	1.88	.89		7	2.18	1.06
18	1.84	1.05		8	2.18	.98
13	1.82	.86		4	2.16	1.01
14	1.81	.97		13	2.14	1.00
1	1.81	1.12		17	2.14	1.03
6	1.81	.99		6	2.13	1.00
4	1.79	.97		3	2.08	1.10
12	1.75	.88		14	2.06	.98
2	1.73	.96		12	2.06	.87
8	1.72	.90		15	2.03	1.11
3	1.71	.98		10	2.03	1.05
15	1.68	.86		18	1.98	.95
16	1.67	.93		9	1.96	1.01
9	1.67	.88		16	1.94	.94
7	1.62	.92		2	1.92	.92
17	1.59	.80		1	1.68	.93

in items 5 & 10. Items 6 & 7 measured teachers' knowledge of activities related to detecting the first and last sound in a word. As for item 17, it states that teachers' knowledge that encouraging children to write their own stories is important. As for items 5 & 10, item 5 is related to teachers implementing skills related to rhymes, alliteration and rhyme oddity. Item 10 is about teachers using colors in visual recognition when teaching the letters and words. A detailed review of elementary grade curricula in UAE explicitly shows that most of the focus is on activities relevant to items 7 & 17 whereas the same curricula lack drills and activities relevant to 5 & 10. The items for both scales (knowledge and skills) correspond to each other. Therefore, correlation between the total knowledge and total skill was .57,  $p < .01$ .

This result is expected because the items in the knowledge scale correspond exactly to the same items in the skill scale. This means that teacher implement the skills of the knowledge they possess. In addition, each item under knowledge was correlated with its correspondent skill item and resulted in significant correlation at both levels .01 & .05. However, there was no correlation between item # 15 knowledge and its corresponding skill (table 3). This may be due to the new trend in the UAE schools that homework should be minimized or at least reduced.

**Table 3**  
**Correlation between knowledge and skills items**

Area	Correlation
1. I do drills on breaking words into syllables e.g. <b>Telephone</b> : te. le. Phone	.42**
2. I do drills on breaking words into sounds e.g. <b>Cat</b> : "k. a. t"	.52**
3. I do drills on blending syllables e.g.. Te. le. phone : <b>telephone</b>	.61**
4. I do drills on blending sounds to form words e.g. k. a. t : <b>cat</b>	.21*
5. I do drills on rhyme e.g. <b>Bat, rat, mat / cup</b>	.38**
6. I do drills on detecting the first sound in a word e.g. "k" : <b>car</b>	.38**
7. I do drills on detecting the last sound in a word e.g. "g" : <b>dog</b>	.32**
8. I do drills on forming meaningful words out of letters sequenced randomly e.g. R-a-c : <b>car</b>	.17*
9. I use drills to reverse words and form meaningful words e.g. <b>Dog</b> : god <b>mug</b> : gum	.42**
10. I use different colors to represent different letters in a word Ex. <b>Dad</b> "the [d] letter in a red block, and the [a] letter in a blue block"	.50**
11. I use nursery rhymes in class.	.27**
12. I use story-books that contain rhymes. e.g. ( <b>Dr. Seuss ...etc</b> )	.19*
13. I use tapes to teach letters, rhymes or any other activities related to literacy.	.20*
14. I use flashcards in introducing new vocabulary?	.22**
15. I ask students to copy texts from books?	.14
16. I ask students to use new vocabulary words in sentences?	.40**
17. I ask students to write their own stories?	.37**
18. I give spelling tests at least once per week?	.34**

With regard to the training that teachers have received in PA, there are differences between the means of knowledge and skills as shown in (table 4). However, these differences are not statistically significant. In a way, this may indicate that teachers receive training on the importance of PA but it is mainly knowledge-based and does not focus on practical skills. These differences are due to the fact that the subject of phonological awareness is not addressed yet in many part of the Arab world nor highlighted in the language curricula. Also, the curriculum does not include activities or drills that focus on PA. There is also an obvious shortage of Arabic materials that focus on phonics. Besides, lack of Arabic children's literature in general and particularly children's literature that focus on rhymes and other PA skills affected the subject of PA negatively.

**Table 4**  
**Means and Standard Deviations of Teachers' Training on Phonological Awareness**

Training	Yes		No	
	Mean	SD	Mean	SD
Knowledge	1.71	.71	1.79	.65
Skills	2.17	.58	2.03	.67

Results in (Table 5) indicate that there are no significant differences between teachers who have taught students with Learning Disabilities and those who have not taught students with Learning Disabilities. This is due to the fact that teachers (both Special Education & Regular Education) in their educational program at the University level receive the same type of education which is more knowledge-based rather than skill-based. It is also important to note that these results are consistent with results related to teachers' acquisition of knowledge more than skills.

**Table 5**  
**Means and Standard Deviations of Teachers Working with Regular and Special Education Students**

Teaching LD	Yes		No	
	Mean	SD	Mean	SD
Knowledge	1.70	.70	1.81	.64
Skills	2.06	.65	2.08	.64

To check whether there were significant differences between teachers who teach first, second or third grade, ANOVA was used and results indicated a significant difference between teachers of different grade levels in the areas of knowledge ( $F = 16.79$ ,  $df = 2$ ,  $p < .01$ ), and skills ( $F = 11.45$ ,  $df = 2$ ,  $p < .01$ ). Post-hoc analysis was calculated to examine where the differences exist. The post-hoc analysis revealed a significant difference at ( $p < .001$ ) between 1<sup>st</sup> & 3<sup>rd</sup> grade teachers in the area of knowledge. Also, a significant difference was found between 2<sup>nd</sup> and 3<sup>rd</sup> grades. However, no significant difference was found between 1<sup>st</sup> & 2<sup>nd</sup> Grade teachers.

ANOVA results indicated that there are significant differences between teachers of different grades at level  $p < .0001$ . The difference was found between grades 1 and 3 and between 2 and 3 but not between 1 & 2. This is because 1<sup>st</sup> & 2<sup>nd</sup> grade teachers are usually more prepared than upper grade teachers and more importantly because teachers of 1<sup>st</sup> & 2<sup>nd</sup> grades do more of PA related activities than teachers of higher grades.

To check if there are significant differences between teachers knowledge and skills by experience, ANOVA was used and results indicated a significant difference between teachers according to experience in the area of knowledge ( $F = 3.06$ ,  $df = 3$ ,  $p < .05$ ). However, no

significant differences were found between teachers based on their years of experience in the area of skills ( $F = 1.01$ ,  $df = 3$ ,  $p > .05$ ).

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