Learning Disabilities Research & Practice, *35*(2), 100–106

DOI: 10.1111/ldrp.12219

Saudi Teachers' Perceptions of In-Service Education and Training Addressing Attention-Deficit/Hyperactivity Disorder

Mohaned G. Abed
King Abdulaziz University
Todd K. Shackelford
Oakland University

Worldwide, 3.0–7.0 percent of school-aged children meet criteria for a diagnosis of Attention-Deficit/Hyperactivity Disorder (ADHD). In Saudi Arabia, ADHD appears to be more prevalent than the worldwide average, with estimates of 12.6–16.7 percent. Unfortunately, there is a relative dearth of research addressing ADHD and related training programs in Saudi Arabia. We investigated perceptions of teachers in Saudi elementary schools regarding current In-Service Education and Training (INSET) programs addressing students diagnosed with ADHD. We interviewed 40 teachers (15 women and 25 men) from public elementary schools in Jeddah, Saudi Arabia. The findings highlight the need to develop INSET programs specifically addressing best practices for managing and educating students diagnosed with ADHD.

As defined in the *Diagnostic and Statistical Manual of Mental Disorders, 5th edition* (DSM-5; American Psychiatric Association, 2013), the key diagnostic features of Attention-Deficit/Hyperactivity Disorder (ADHD) include persistent indications of inattentiveness, hyperactivity, and impulsiveness. Typically, ADHD emerges and is diagnosed in childhood and continues into the teenage years and then into adult life, with decreasing severity of symptoms with age. ADHD is often comorbid with Learning Disorders (LD). This comorbidity is between 7.0 and 92.0 percent, subject to the LD classification system employed, with some scholars postulating that the two conditions represent overlapping spectra (Mayes et al., 2000), common neuropsychological etiologies (DuPaul & Volpe, 2009), and shared genetics (Saudino & Plomin, 2007).

ADHD affects individuals worldwide. The *DSM-5* suggests that variations in prevalence estimates across countries and cultures may be attributable, in part, to variations in cultural attitudes about the causes and social acceptability of childhood inattentiveness, hyperactivity, and impulsiveness. Of particular relevance to the current research, in Saudi Arabia the prevalence of ADHD is notably high, ranging between 12.6 and 16.7 percent (Al Hamed et al., 2008; Rahim et al., 1996), compared with the ADHD worldwide prevalence reported in the *DSM-5* of 3.0–7.0 percent among school-aged children.

Research indicates that the structured classroom setting may present significant challenges for children with ADHD, because this setting demands substantial self-regulation and limits behavior expression to specifically goal-directed behaviors (Rief, 2005). In such an environment, academic and social success depends, in part, on teacher and student expectations that students are able to concentrate, complete tasks, follow instructions, and adhere to classroom norms while ensuring minimum disruption (DuPaul & Stoner, 2003).

Instructional quality is one of the most important elements in provision of high-quality education (Leu & Price-Rom, 2006). The American Institutes for Research reviews and examines in-service teachers' professional programs and aims to develop, maintain, and support high-quality instruction (Leu & Ginsburg, 2011). Accordingly, the provision of programs centered on developing high-quality instruction has become a priority for countries aspiring to fulfill the United Nations Educational, Scientific and Cultural Organization (UNESCO) "Education For All" campaign goal of enrolling all children and young adults in basic education (UNESCO, 2004). The "Education for All" campaign maintains that inclusive education settings present the most effective way for reducing discriminatory stereotypes, promoting inclusivity in society, and achieving literacy for all. The campaign suggests that such educational settings can provide valuable education for a large number of children and improve the efficiency and cost-effectiveness of the entire system for providing education (UNESCO, 1994, p. iv).

High-quality instruction requires significant skill, knowledge, and training. Teachers often experience special difficulties in their efforts to provide children diagnosed with ADHD with suitable attention and management in the learning environment. Numerous studies document that educators are provided limited training with regard to instructing students diagnosed with ADHD (Barbaresi & Olsen, 1998; Bussing et al., 2002; Jerome et al., 1994). In a study by

Requests for reprints should be sent to Todd K. Shackelford, Oakland University. Electronic inquiries should be sent to shackelf@oakland.edu.

LEARNING DISABILITIES RESEARCH & PRACTICE

Bussing et al. (2002), for example, half of the respondents (current educators) reported that they had not received any formal training for successfully instructing students diagnosed with ADHD. In another study that examined the experiences of 44 elementary school teachers, the large majority of respondents (77 percent) had not received any formal training for instructing students diagnosed with ADHD during their undergraduate training. Over 95 percent of these educators reported that appropriate training would provide them with knowledge for successfully instructing students diagnosed with ADHD. These findings make a strong case for teachers to be afforded pre- and in-service training on academic and behavioral initiatives for how to successfully instruct students diagnosed with ADHD (Jerome et al., 1994).

Jerome et al. (1994) reported that over 95 percent of educators in their study report a strong interest in additional training after their undergraduate education to more effectively instruct students diagnosed with ADHD. Yet Jerome et al. also reported that just 20 percent of respondents reported having been recruited to participate in any form of professional development following their undergraduate graduation. Consequently, it is likely that such professional development opportunities are limited, despite the reported interest and demand. These findings demonstrate that teachers may have few opportunities to learn about ADHD and instructional techniques appropriate for educating students diagnosed with ADHD, both during their undergraduate training and after graduating.

As reported by Sciutto et al. (2000), an important element of instructional success is the teacher's understanding of the diagnosis and symptomology of ADHD. Sciutto et al. provide evidence that educators prefer the workshop approach to learning about ADHD over less interactive instructional methods. Indeed, in a 2005 study by West et al. (2005) and colleagues, the researchers documented that professional development substantially improves educators' understanding of ADHD. Specifically, educators who participated in the workshop training scored significantly higher on the Knowledge about Attention Deficit Disorder Questionnaire than did educators who did not participate in the workshop training.

In-service teacher education (INSET) is widely regarded as an important means for enhancing educator development (Saiti & Saitis, 2006). INSET programs can have important and positive implications for addressing domains that are essential for effective teaching, such as improving educator knowledge, skills, and attitudes; supporting educators' efforts to maintain currency of knowledge (Bolam, 1982); and facilitating educators' efforts to adjust instructional methods with changes in educational provisioning policy (Fullan, 2007). These important functions of INSET programs have motivated research to investigate the success of INSET programs. These studies have reported some conflicting findings regarding the effectiveness of INSET programs. Grieve and McGinley (2010), for example, have shown that INSET programs successfully promote teaching skills, and research by Guskey (1986) found that these programs improve student achievement. Other researchers, such as Çimer et al. (2010), report that some INSET programs have failed to produce the desired outcomes. These opposing views suggest that offering effective INSET programs may be difficult in some contexts, and also point to the complexity of professional development. These opposing views also suggest the utility of developing a standardized framework for effective professional development to serve as a guide for designing and implementing INSET programs, especially in domains where INSET programs have previously failed to produce the desired outcomes. Finally, the opposing views suggest the potential value of investigating and improving the effectiveness of INSET programs. Listening carefully to input provided by educators is one way of identifying the benefits and challenges of designing and implementing INSET programs. Therefore, we designed the present study to directly secure teachers' input on the effectiveness of INSET programs deployed by the Saudi Ministry of Education.

As noted previously, the estimated prevalence of ADHD among school-aged children is higher in Saudi Arabia than in many other countries (Al Hamed et al., 2008; Rahim et al., 1996). It may be especially important and impactful, therefore, to provide ADHD training to teachers in Saudi Arabia (Abed et al., 2014). Indeed, teachers who have participated in such training programs are subsequently more knowledgeable about and better able to manage and educate students with ADHD (Barbaresi & Olsen, 1998).

In Saudi Arabia as elsewhere, teachers are provided very little ADHD-specific training. They often are required to complete modules on educating children with special educational needs as only one aspect of an undergraduate degree in special education. Saudi teachers do participate in professional development, but there is a need to address ADHD and similar concerns in the context of their professional development.

The current research investigates INSET programs regarding ADHD in Saudi Arabia from the perspective of those enrolled in such programs. We operate on the presumption that participating teachers are able to comment thoughtfully on the utility and quality of these programs, as well as highlighting potential shortcomings that might be rectified in future INSET programs. This study addresses the following research question: What are the assessments of teachers in Saudi elementary schools in relation to the present and future INSET programs addressing ADHD?

METHOD

An exploratory, qualitative case study design was used to assess the views of Saudi teachers concerning ADHD-specific INSET programs that are available to them, and in which they have participated. The qualitative case study design, as applied in the current research, affords a focus on teachers' experiential awareness of and attention to the impact of political, social, and cultural variables relevant to instructing children diagnosed with ADHD in the Saudi Arabian context (Stake, 2005).

Participants

Forty instructors were selected by convenience sampling. We recruited participants from several public elementary

TABLE 1
Participant Demographics ($n = 40$)

Variable	*Frequency*
Gender	
Male	25
Female	15
Teaching experience (years)	
1–10	22
11–20	13
21–30	5
Qualifications	
Bachelors	37
Masters	3
Attended previous ADHD training	
Yes	8
No	32

schools serving different parts of Jeddah, Saudi Arabia. A comparable cultural and educational background assisted the senior author in establishing and maintaining trust and rapport with participants. The senior author shares with the participants a language, identity, and experiential base, allowing him to function jointly as a researcher and "insider." Table 1 presents available demographic data for the participants.

The current study observed best practices with regard to several ethical considerations, as informed by the British Educational Research Authority (Ozturgut & Murphy, 2009). The study observed informed consent, voluntary participation, the option of withdrawal, confidentiality, proper data maintenance techniques, discretion, and the availability of transcribed interviews for further analysis, upon request of the senior author. Before initiating the study, school administrators and teaching staff were provided an information sheet detailing the study objectives and the potential benefits of participation. The study was reviewed and approved by the University Research Ethics Committee of the university that houses the senior author.

Interviews

Semistructured interviews were conducted in the office of the researcher, or at the school where the participant taught, if preferred by the participant. Each interview took about 70 minutes, and was audiotaped. Use of a semistructured interview design allowed each participant to respond to the study questions, but also afforded the opportunity for the researcher and participant to discuss particular issues or concerns in greater detail, as needed or as appropriate. Use of this study design therefore afforded the opportunity to investigate issues that may not previously have been addressed in the literature (see, e.g., Reinharz, 1992). Interviews were conducted in Arabic, transcribed from audio recording, and then translated into English using a standard translation and back-translation method. Notes and reflections of the researcher were recorded and retained for comparison with interview transcriptions. Here, the researcher records, for example, changes in the respondent's physical and psychosocial state, or changes in the researcher's own feelings toward the respondent. Accomplished qualitative researchers become more knowledgeable in identifying patterns in the responses with rigor and insight. Qualitative researchers must not become attached to respondents, or to expectations about the flow of an interview, but must remain flexible throughout to produce valuable data on the phenomena that can be replicated in a similar context.

Measures

The research interview was guided by three questions: (1) "To what extent do you think the INSET programs regarding ADHD are important?"; (2) "What is your opinion of the current INSET programs regarding ADHD?"; and (3) "What are the elements that enhance INSET programs regarding ADHD?"

RESULTS

An inductive technique was implemented for evaluation of the qualitative data, and thematic analysis was implemented to recognize, evaluate, and report themes expressed by participants' responses (Galloway & Jenkins, 2005). Response codes were developed and organized into themes, given that responses (and, therefore, response codes) could overlap. A thematic map was applied to facilitate identification of relationships among responses (Probertson et al., 2000). A thematic map demonstrates the organization of the concepts according to the varying levels and potential interactions between concepts. Transcripts were coded systematically and independently by two researchers (the senior author and a trained research assistant). Routine meetings with the research team were held to deliberate on key issues. The analysis team deliberated on the coding and interpretation approach in detail, and any coding differences were discussed and resolved to streamline codes. We translated into English the quotes used to elucidate the concepts and sub-concepts. Additionally, we reviewed interview notes to identify evidence of extraneous circumstances that might have affected the researcher's interpretation of concepts. This inductive technique permitted the emergence and identification of themes expressed by participants in response to the study questions (Liu, 2011; Probertson et al., 2000).

Each interview was guided by three questions (see Materials, above). We identified several themes in the responses provided by teachers. These included the significance of INSET programs, the nature of current INSET programs, aspects of the training, opportunities for additional training, elements that might enhance the standard of training, and advantages of this training. We address each issue, in turn, and with reference to specific comments and suggestions offered by participants.

Significance of INSET Programs

All participants recognized the importance of INSET programs for providing and supporting the education of children diagnosed with ADHD. Participants unanimously expressed support for ADHD-specific INSET programs, noting that these programs could "Improve ADHD-related knowledge and understanding, specifically the needs of students with ADHD" (Participant 39), "Offer guidance for better management of ADHD behaviors" (Participant 8), "Enhance teacher practices with regard to students with ADHD" (Participant 5), "Help to eradicate negative views about students with ADHD" (Participant 15), "Increase confidence in teaching students with ADHD" (Participant 27), and "Support the need to focus on practical considerations with immediate advantages for teaching and learning" (Participant 22).

Current INSET Programs

Thirty-eight of the participants (95 percent) were disappointed and reported frustration and lack of knowledge about how to instruct students diagnosed with ADHD in the mainstream learning environment without suitable training and preparation for managing ADHD-related behaviors. The training time, the qualifications of the trainers, failure to listen to teachers' needs, failure to follow up with teachers, and the theoretical orientation of the training were some of the elements of existing INSET programs criticized by the participants. Thirty-two participants (80 percent) highlighted that "the programs mostly involved theoretical information rather than more useful practical information." Thirty-six of the participants (90 percent) reported that "The primary focus of these programs was centered on the nature of ADHD and not the general methods for guiding treatment and intervention." Therefore, the majority of participants reported that these programs did not facilitate or even address effective teaching and management of students diagnosed with ADHD.

Participants also criticized the Saudi Ministry of Education for providing INSET opportunities nearly exclusively for special education teachers, and expressed a strong interest in participating in ADHD-specific INSET programs. One participant (Participant 23) stated that, "Teachers looked for courses other than that provided by the Ministry." Importantly, the lack of ADHD-specific INSET programs was frequently highlighted as the main reason for their stress and their negative views on teaching in a classroom with students diagnosed with ADHD. Therefore, and as expressed by many teachers (45 percent) in the current study, these approaches to INSET programs are unlikely to be suitable in terms of content and process. One participant stated that "The teacher training does not take into account the knowledge level of the teachers and is essentially more concerned with content delivery" (Participant 14). Another participant added that "It should be recognized that teachers can adopt roles far more valuable than that recognized by such courses" (Participant 2).

Elements Enhancing the Standard of Training

The participants have several suggestions for future INSET programs related to ADHD, as following: Gaining an understanding of the educational requirements and characteristics associated with children diagnosed with ADHD (32 participants, 80 percent); practical approaches to managing students diagnosed with ADHD (34 participants, 85 percent); ways of differentiating the lessons to better serve students diagnosed with ADHD (24 participants, 60 percent); the importance of encouraging the school principal and other administrators to require teachers to attend such programs (28 participants, 70 percent); integrating these programs within the teacher's workload, to afford appropriate time for attending (36 participants, 90 percent); linking attendance at these programs to annual financial bonus or job bonus, and to nomination for various positions (28 participants, 70 percent); addressing teacher misconceptions about ADHD (18 participants, 45 percent); and changing teacher attitudes toward children diagnosed with ADHD (18 participants, 45 percent).

Teachers reported that most weaknesses or challenges associated with current INSET programs could be addressed by modifying these programs. For example, "In these courses you can easily become bored when attending such activities for the sheer purpose of listening" (Participant 13, with similar comments by Participants 32 and 38)—consistent with the fact that complaints among teachers are frequent with regard to the theoretical (rather than the practical) aspects of training. Indeed, participants noted with dismay that "Practical courses are more limited" (P8). Another issue highlighted is the "shortcoming of instructors, who are not qualified to establish links between theory and practice" (Participant 1, with similar comment by Participant 16)—a shortcoming that participants noted could be addressed by providing INSET instructors with better training.

DISCUSSION

As with other studies, teachers in the study recognized the potential importance of INSET programs and expressed a strong desire to participate in additional training addressing ADHD (see Jerome et al., 1994). These teacher reports indicate that there may be a significant lack of professional development opportunities. These results further suggest that the teachers may have had few opportunities to learn about ADHD, both in the context of their educational program and subsequent to graduation. In line with the work of Sciutto et al. (2000), participants reported that lack of education is a key factor limiting their effectiveness at instructing students diagnosed with ADHD. West et al. (2005) also found that professional development can and does increase teachers' knowledge about ADHD: Teachers who completed an ADHD-specific INSET program scored significantly higher than teachers who did not participate in an ADHD-specific INSET program (West et al., 2005). Other reports of the participants are consistent with the results of Jerome et al. (1994) and Kos et al. (2004), who documented that teachers with specialized training in ADHD were more knowledgeable about ADHD than those without such training.

The teachers in the current study also recognized an important issue that requires careful examination and needs to be resolved in the provision of INSET programs. This issue concerns the nature of INSET programs and the degree to which teachers' preference for practical knowledge, with immediate effect on everyday practice, should determine the overall content and structure of such programs. The emphasis of teachers, as expressed in this study, on the practical sphere accords with the findings of Symeonidou and Phtiaka (2009). The teachers in the latter study reported a preference for practical applications when questioned about their priorities for future INSET programs. Teachers in the current study offered several suggestions also reported by participants in Symeonidou and Phtiaka regarding priorities for future INSET programs related to ADHD.

All teachers in the current research described a lack of training with regard to ADHD (and see Jerome et al., 1994). The teachers also noted that special education teachers are afforded additional training, including ADHD-specific training, and expressed disappointment that they also were not afforded this training. Overall, estimates suggest that between 12 and 17 percent of Saudi Arabian students may have ADHD (Al Hamed et al., 2008; Rahim et al., 1996), and these students are instructed in mainstream classes (Reid et al., 1994)—suggesting that mainstream classroom teachers should be provided with ADHD training.

The potential efficiency of on-the-job training (in the form of INSET programs) may also be linked with the perspectives of teachers toward such training: if the teachers hold positive attitudes, they may be more open to learning. Importantly, a positive attitude is considered fundamental to in-service training arranged by schools: attitudes toward education, in-service training, and philosophy affect responses to the training delivered (Shkedi, 1996). As has been highlighted by Chiang (2008), it is not sufficient merely to provide novice teachers with lesson planning and classroom management theories. Initiatives for teacher development need to be centered on ensuring that teachers are afforded opportunities to learn, develop, and maintain reflective teaching practices—and these opportunities should include instruction of students diagnosed with ADHD.

The work of McMorrow (2007) suggests that a "one size fits all" instructional plan or attitude—in other words, a prepackaged solution—does not properly consider issues such as contextual diversity. Evans (1993) has outlined a number of limiting aspects for school INSET programs, such as time and funding constrains. Educators in the present study expressed similar limiting aspects. In line with the results of Abed et al. (2014), the participants in the current study offered several comments and suggestions that might improve ADHD-specific INSET programs: INSET programs should focus on more wide-ranging knowledge areas and should address misconceptions and gaps in knowledge about ADHD, and these programs should direct attention not only to acquiring skills and knowledge but also to facilitating more positive perspectives about students diagnosed with ADHD.

Research conducted by Dilaver (1994) suggested that most elementary school teachers consider INSET program length to be adequate, but the majority of teachers report that such programs do not provide or address the professional skills and knowledge required to enhance the overall efficiency of in-school teaching.

INSET programs can be valuable in terms of expanding teachers' knowledge concerning the importance of their role in the adoption of inclusive practices. These programs also can provide teachers with the necessary positive educational perspective and, accordingly, the skills needed to satisfy that perspective, including skills that would facilitate them in making changes to their current approach or perspective in comprehensive, inclusive ways (Avramidis et al., 2000). Responses of participants in the current research indicate that it is important that teachers' knowledge of ADHD, as well as their understanding of children diagnosed with ADHD and perspectives about their inclusion in mainstream teaching environments, is carefully guided and facilitated through undergraduate and INSET programs (Doukanari, 2015)

Moreover, as has been reported regarding INSET programs globally, teachers in the current research indicated that INSET programs were provided as "one shot programs," lacking additional consultation opportunities or services and containing virtually no postprogram follow-up with participants. A number of scholars (e.g., Weiss et al., 1998) have expressed their own negative view of this approach, emphasizing that follow-up assistance to teachers is crucial for their success. In addition, INSET programs must be subject to systematic assessment and planning, with the aim of achieving behavioral change among staff (e.g., Weiss at al., 1998).

Implications for Practice

The present study has several implications for both theory and practice, and should be considered by the Saudi Ministry of Education, by schools, and by other relevant institutions. With this context in mind, we offer the following recommendations:

(1) The number of INSET programs offered should be increased. Regarding the strengths of existing programs, highlighted in the present study, this change could contribute to the career and personal development of more in-service teachers with respect to instructing students diagnosed with ADHD. INSET programs thus could serve one of their primary purposes: enhancing educators' professional competencies (Veenman et al., 1994), and facilitating their efforts to cope with changing conditions.
(2) A reasonably short training program will be more effective than a lengthy or extensive program. This change is important given the increasing emphasis in education centers on state-mandated testing of the basic elements of the curriculum—educators have limited time to attend lengthy training on specific disorders that might affect only a small percentage of the students in the classroom.
(3) The benefits of the collaboration between teachers and the relevant educational authorities can be secured by a better balance between theory and practice in future INSET programs addressing ADHD. Educators' preference for the practical approach must

be respected, while also addressing the theoretical underpinning of the program. An INSET program that provides, in addition to practical approaches, opportunities for educators to reflect on and develop understanding of the ideals and benefits of inclusive education is more likely to inspire shifts in attitudes (Koutrouba et al., 2006).

(4) INSET program trainers should be experienced, competent, and knowledgeable in matters of training teachers to overcome instructional hurdles that they may encounter in the classroom.

(5) Given that most educators expect to learn new ideas that can inform their teaching practice, INSET programs ought to be focused on classroom teaching practice.

(6) The structure of INSET programs should be designed to effectively impart knowledge. Teacher-centered (rather than, e.g., lecture-based) approaches should be used to enhance teachers' involvement in the training process. This change could also help teachers apply new ideas in the classroom, and thus could increase the possibility of changing classroom practice. As noted by Lou and Chen (2016), educators may regard INSET as yet another burden.

(7) The time and place of INSET programs should be carefully considered. As noted by Hung (2016), teachers' work schedules should be considered when planning INSET programs.

CONCLUSIONS

The findings of the current research highlight Saudi Arabian teachers' perceptions of the need to ensure that they are provided with appropriate opportunities to increase their knowledge and improve their professional capacity and skills to better serve students diagnosed with ADHD, specifically in the form of INSET programs. Our findings have also identified inadequacies in existing INSET programs, as well as teachers' expectations for such programs. Many of the participants in the current research communicated negative viewpoints regarding existing INSET programs, but also noted several strengths of such programs. The current research contributes to the international literature with data on perceptions of INSET programs on the part of teachers in Saudi Arabian elementary schools.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

ACKNOWLEDGMENTS

This work was supported by the Deanship of Scientific Research (DSR), King Abdulaziz University, Jeddah, under grant no. 324-123-D1436. The authors, therefore, acknowledge the DSR for technical and financial support.

REFERENCES

Abed, M., Pearson, S., Clarke, P., & Chambers, M. (2014). Saudi Arabian teachers' knowledge and beliefs about ADHD. *Journal of the International Association of Special Education*, *15*, 67–74.

Al Hamed, J. H., Taha, A. Z., Sabra, A. A., & Bella, H. (2008). Attention deficit hyperactivity disorder (ADHD) among male primary school children in Dammam, Saudi Arabia: Prevalence and associated factors. *Journal of the Egyptian Public Health Association*, *83*, 165–182.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author.

Avramidis, E., Bayliss, P., & Burden, R. (2000). A survey into mainstream teachers' attitudes towards the inclusion of children with special educational needs in the ordinary school in one local education authority. *Educational Psychology*, *20*, 191–211. https://doi.org/10.1080/713663717

Barbaresi, W. J., & Olsen, R. D. (1998). An ADHD educational intervention for elementary school teachers: a pilot study. *Journal of Developmental and Behavioral Pediatrics*, *19*, 94–100.

Bolam, R. (1982). *School-focused in-service training*. Portsmouth, NH: Heinemann.

Bussing, R., Zima, B. T., Gary, F. A., & Garvan, C. W. (2002). Use of complementary and alternative medicine for symptoms of attention-deficit hyperactivity disorder. *Psychiatric Services*, *53*, 1096–1102. https://doi.org/10.1176/appi.ps.53.9.1096

Chiang, M. H. (2008). Effects of fieldwork experience on empowering prospective foreign language teachers. *Teaching and Teacher Education*, *24*, 1270–1287. https://doi.org/10.1016/j.tate.2007.05.004

Çimer, S. O., Çakır, L., & Çimer, A. (2010). Teachers' views on the effectiveness of in-service courses on the new curriculum in Turkey. *European Journal of Teacher Education*, *33*, 31–41. https://doi.org/10.1080/02619760903506689

Dilaver, H. (1994). *Conditions of teacher training and replacement in Turkey*. Istanbul, Turkey: MEB Press.

Doukanari, M. (2015). Attention deficit hyperactivity disorder (ADHD): Cypriot elementary school teachers' knowledge, attitudes and in-service training (INSET). *Hillary Place Papers*, *2*, 1–13.

DuPaul, G. J., & Stoner, G. D. (2003). *ADHD in the schools: Assessment and intervention strategies*. New York, NY: Guilford Press.

DuPaul, G. J., & Volpe, R. J. (2009). ADHD and learning disabilities: Research findings and clinical implications. *Current Attention Disorders Reports*, *1*, 152–155. https://doi.org/10.1007/s12618-009-0021-4

Evans, K. (1993). *School-based in-service education. Case studies and guidelines for implementation*. Bruxelles, Belgium: Association for Teacher Education in Europe.

Fullan, M. (2007). *The new meaning of educational change*. London, UK: Routledge.

Galloway, F. J., & Jenkins, J. R. (2005). The adjustment problems faced by international students in the United States: A comparison of international students and administrative perceptions at two private, religiously affiliated universities. *NASPA Journal*, *42*, 175–187.

Grieve, A. M., & McGinley, B. P. (2010). Enhancing professionalism? Teachers' voices on continuing professional development in Scotland. *Teaching Education*, *21*, 171–184. https://doi.org/10.1080/10476210903281482

Guskey, T. R. (1986). Staff development and the process of teacher change. *Educational Researcher*, *15*, 5–12. https://doi.org/10.3102/0013189x015005005

Hung, B.P. (2016). Evaluation of an in-service training program for primary school teachers of English in Vietnam. *International Journal of English Linguistics*, *6*, 96–103. https://doi.org/10.5539/ijel.v6n4p96

Jerome, L., Gordon, M., & Hustler, P. (1994). A comparison of American and Canadian teachers' knowledge and attitudes towards Attention Deficit Hyperactivity Disorder (ADHD). *Canadian Journal of Psychiatry*, *39*, 563–567. https://doi.org/10.1177/070674379403900909

Kos, J., Richdale, A., & Jackson, S. (2004). Knowledge about attention deficit hyperactivity disorder: A comparison of in-service and pre-service teachers. *Psychology in the Schools*, *41*, 517–526. https://doi.org/10.1002/pits.10178

Koutrouba, K., Vamvakari, M., & Steliou, M. (2006). Factors correlated with teachers' attitudes towards the inclusion of students with special educational needs in Cyprus. *European Journal of Special Needs Education*, *21*, 381–394. https://doi.org/10.1080/08856250600956162

Leu, E., & Ginsburg, M. (2011). *Inservice teacher professional development: EQUIP1 first principles compendium*. Washington, DC: American Institutes for Research.

Leu, E., & Price-Rom, A. (2006). *Quality of education and teacher learning: A review of the literature*. Washington, DC: USAID.

Liu, L. (2011). An international graduate student's ESL learning experience beyond the classroom. *TESL Canada Journal*, *29*, 77–92. https://doi.org/10.18806/tesl.v29i1.1090

Lou, Y., & Chen, L. (2016). A study of the English teachers' burnout in a local comprehensive university in China. *Creative Education*, *7*, 646–654. http://doi.org/10.4236/ce.2016.7406

Mayes, S., Calhoun, S., & Crowell, E. (2000). Learning disabilities and ADHD: Overlapping spectrum disorders. *Journal of Learning Disabilities*, *33*, 417–424. https://doi.org/10.1177/002221940003300502

McMorrow, M. (2007). Teacher education in the post-methods era. *ELT Journal*, *61*, 375-377. https://doi.org/10.1093/elt/ccm057

Ozturgut, O., & Murphy, C. (2009). Literature vs. practice: Challenges for international students in the U.S. *International Journal of Teaching and Learning in Higher Education*, *22*, 374–385.

Probertson, M., Line, M., Jones, S., & Thomas, S. (2000). International students, learning environments and perceptions: A case study using the Delphi technique. *Higher Education Research and Development*, *19*, 89–102. https://doi.org/10.1080/07294360050020499

Rahim, F. E. A., Al-Hamad, A., Chaleby, K., & Al-Subaie, A. (1996). A survey of a child psychiatry clinic in a teaching hospital in Saudi Arabia—Clinical profile and cross-cultural comparison. *Saudi Medical Journal*, *17*, 36–41.

Reid, R., Vasa, S. F., Maag, J. W., & Wright, G. (1994). An analysis of teachers' perceptions of attention deficit-hyperactivity disorder. *Journal of Research and Development in Education*, *27*, 195–202.

Rief, S. F. (2005). *How to reach and teach children with ADD/ADHD* (2nd ed.). San Francisco: Jossey-Bass.

Reinharz, S. (1992). *Feminist methods in social research*. Oxford, UK: Oxford University Press.

Saiti, A., & Saitis, C. (2006). In-service training for teachers who work in full-day schools. Evidence from Greece. *European Journal of Teacher Education*, *29*, 455–470. https://doi.org/10.1080/02619760600944779

Saudino, K. J., & Plomin, R. (2007). Why are hyperactivity and academic achievement related? *Child Development*, *78*, 972–986. https://doi.org/10.1111/j.1467-8624.2007.01044.x

Sciutto, M. J., Terjesen, M. D., & Bender, F. A. (2000). Teachers' knowledge and misperceptions of attention-deficit/hyperactivity disorder. *Psychology in the Schools*, *37*, 115–122. https://doi.org/10.1002/(SICI)1520-6807(200003)37:2<115::AID-PITS3>3.0.CO;2-5

Shkedi, A. (1996). Teacher education: What we can learn from experienced teachers. *British Journal of In-Service Education*. *22*, 81–97. https://doi.org/10.1080/0305763960220108

Stake, R. E. (2005). Qualitative case study. In N. Denzin and Y. Lincoln (Eds.). *Handbook of qualitative research* (pp. 443–466). Thousand Oaks, CA: Sage.

Symeonidou, S., & Phtiaka, H. (2009). Using teachers' prior knowledge, attitudes and beliefs to develop in-service teacher education courses for inclusion. *Teaching and Teacher Education*, *25*, 543–550. https://doi.org/10.1016/j.tate.2009.02.001

UNESCO. (1994). *The Salamanca statement and framework for action on special needs education*. Paris, France: Author.

UNESCO. (2004). *EFA global monitoring report 2005: The quality imperative*. Paris, France: Author.

Veenman, S., Van Tulder, M., & Voeten, M. (1994). The impact of inservice training on teacher behavior. *Teaching and Teacher Education*, *10*, 303–317. https://doi.org/10.1016/0742-051X(93)E0001-8

Weiss, I. R., Montgomery, D. L., Ridgway, C. J., & Bond, S. L. (1998). *Local systemic change through teacher enhancement: Year three cross-site report*. Chapel Hill, NC: Horizon Research.

West, J., Taylor, M., Houghton, S., & Hudyma, S. (2005). A comparison of teachers' and parents' knowledge and beliefs about attention-deficit/hyperactivity disorder (ADHD). *School Psychology International*, *26*, 192–208. https://doi.org/10.1177/0143034305052913

About the Authors

Mohaned G. Abed is an Associate Professor in the college of Educational Graduate Studies at King Abdulaziz University in Jeddah, Saudi Arabia.

Todd K. Shackelford is Distinguished Professor and Chair of Psychology at Oakland University in Rochester, Michigan, USA.