

# Perception of Teachers' Professional Development Needs, Impacts, and Barriers: The Abu Dhabi Case

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## Abstract

The article reports on findings from the TALIS (Teaching and Learning International Survey) 2013 study for Abu Dhabi which gathered teachers' views on teaching and learning with a focus on professional development. The aim of this study is to better understand teachers' perceptions of professional development needs and impacts as well as the barriers faced by teachers from secondary schools in Abu Dhabi. The study provides some insights into the variations of those perceptions relative to other independent variables such as teachers' age and gender, and type of schools. With regard to the perceived need for professional development activities, the most significant variation is observed with regard to public or private schools. With regard to the impact of those activities, male teachers almost consistently assign higher perceived impact scores than female teachers. Public schools also assign higher perceived impact scores for all activities that they participated in. However, female teachers assign significantly higher perceived barrier scores to five of the seven listed barriers to participating in professional development activities. The research has implications for professional development providers to ensure the effectiveness of professional development opportunities for educators in Abu Dhabi.

## Keywords

professional development, professional development needs, professional development impact, professional development barriers, TALIS, Abu Dhabi

## Introduction

There is increasing awareness that teachers must be carefully recruited and developed professionally throughout the course of their careers to be effective (Billingsley, 2004; Burns & Lawrie, 2015). Developing an effective means of supporting and retaining teachers is crucial to creating a quality learning environment for students and a supportive work environment for teachers (Evers, Van der Heijden, & Kreijns, 2016; Polly et al., 2015). Professional development is necessary to fill in the gaps in the skill sets of new teachers, and to continue to develop the expertise of teachers (Evers et al., 2016). Professional development is necessary to keep the teacher up-to-date with the continuously changing practices, and student needs.

Success requires teachers to be active learners and be a coherent part of other well-planned professional development activities. To improve teaching in the classroom, professional development must be collaborative, long term, and content driven (Guskey & Yoon, 2009). Research also stresses that to be successful, teachers need professional development that is a sustained, intensive effort to improve teaching and learning (Richardson, 2003). Researchers have identified professional

development program design elements thought to maximize teacher learning, including a strong content focus, inquiry-oriented learning approaches, collaborative participation, and coherence with school curricula and policies (Garet, Porter, Desimone, Birman, & Yoon, 2001; Garet et al., 2008; Santagata, Kersting, Givvin, & Stigler, 2011).

The Organization for Economic Co-Operation and Development's (OECD) "Teaching and Learning International Survey (TALIS; 2013)" is a large-scale survey involving 34 countries (TALIS, 2013). The survey focuses on dimensions related to the working conditions of teachers, the learning environment in schools, and the various efforts of school leadership (TALIS, 2013). A major part of TALIS is related to the professional development of teachers. The survey reflects teachers' experiences with regard to professional development. The experiences cover most activities related to advancing teachers'

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skills and knowledge. TALIS focuses on the different types of professional development opportunities teachers receive which includes induction and mentoring programs. It examines a range of variables or constructs. The variables are related to teachers and schools. The variables are thought to influence the type and amount of professional development that a teacher undertakes. The survey also covers professional development needs, and perceived impacts. Teachers are also given the chance to identify the barriers that prevent them from attaining their desired professional development.

Abu Dhabi participated in two TALIS 2013 options: lower secondary education (International Standard Classification of Education [ISCED] 1) and upper secondary education (ISCED 2). The Abu Dhabi Education Council (ADEC) is in charge of the school system across the Emirate of Abu Dhabi. ADEC has stressed how critical it is for teachers to have ongoing and regular opportunities to participate in professional development programs. Abu Dhabi education system is unique compared with most countries. This would explain some of the results we might obtain in this study. The current research may be considered a case study based on in-depth investigation of Abu Dhabi school practices with regard to teacher's professional development. The objective is to provide a detailed description of the institutional setting within which teacher professional development takes place to improve our understanding of the context in which the various relationships may be interpreted. The study examines the variation of professional development in Abu Dhabi schools. The objective of this study is to better understand teachers' perception of professional development needs, barriers, impact, and durations. The study also identifies the effects of characteristics of teachers (gender and years of experience) and schools (public, private, or vocational) on teachers' perceptions of professional development. The significance of the study outlines how this investigation improves school practices. It seeks to understand the teachers' experience as they participate in professional development. The current study is also inspired by many writings that stress the significance of teachers' continuous professional development in improving educational performance and effectiveness (Girvan, Conneely, & Tangney, 2016). This study may inspire many ADEC policy makers who support the relevance of career-long opportunities for professional development.

## Review of Literature

Professional development should provide an important tactic for improving schools, increasing teacher quality, and improving student learning (Girvan et al., 2016; Opfer, Pedder, & Lavicza, 2011; Witte & Jansen, 2016). The National Staff Development Council (NSDC; 2001) stresses that professional development is rapidly being viewed as high-quality ongoing training programs with intensive follow-up and on-the-job support. Hill, Beisiegel, and Jacob

(2013) provided evidence based results to show that professional development is significantly linked to student achievement. These findings and similar reported evidences point at the impact of developing teachers' competencies (Meissel, Parr, & Timperley, 2016). Quality professional development can lead to important qualitative outcomes such as the creation of a positive school culture, citizenship, improvement in individual teacher skills, and development of opportunities for peer learning (Willemse, Dam, Geijssels, van Wessum, & Volman, 2015).

### *Needs for Professional Development Activities*

Teachers learn best through professional development that addresses their needs (Meissel et al., 2016). The theoretical framework of adult learning theory shares the need for ongoing quality professional development, which requires teachers to become lifelong adult learners (Eleonora, 2003; Hiebert, Gallimore, & Stigler, 2002). Professional development needs include many different activities. Some activities focus on students with special needs and managing the classroom. Other activities involve designing curriculum and unit planning (Garet et al., 2001; Pehmer, Groschner, & Seidel, 2015). From the school administrative side, some suggested managing budgets and purchasing (Sağır & Memişoğlu, 2013). Evers et al. (2016) cited activities dealing with teaching strategy support, information on where to search for needed resources, classroom management, and parental involvement. Daresh (2003) also cited activities necessary for beginner teachers to include how to plan classes, manage student behavior, and work within district rules). He also mentioned personal concerns and teaching concerns. In a survey of new teachers, Yohon (2005) identified assessment tools, student motivation, curriculum development, lesson planning, and standards documentation. The recognition and respect for the leadership abilities of teachers and all members of the school community is essential (Witte & Jansen, 2016). Teachers need to be empowered to further develop expertise in subject matter content, technologies, and other essential elements that lead to high standards or quality teaching (Korkko, Kyyro-Ammala, & Turunen, 2016; Witte & Jansen, 2016). The NSDC (2007) created a set of nine standards that all professional development should follow. They include content knowledge and quality teaching, research-basis, collaboration, diverse learning needs, student learning environments, family involvement, evaluation, data-driven design, and teacher learning.

### *Impact of Professional Development Activities*

Developers and policy makers call for more rigorous evidence that describes how professional development design elements affect the likelihood of program success (Witte & Jansen, 2016). Poskitt (2005) stressed that participations in professional development have some impact on the teachers'

ability to acquire and develop knowledge and skills. Gabriel, Day, and Allington (2011) noted the importance of emotional intelligence skills essential to good thinking, planning, and dealing with students and colleagues. Desimone (2009) notes the importance of the positive impact of professional development on the teachers' ability to decide on and implement valued changes in teaching. Bolam (2002) stresses the impact of professional development on leadership behavior so that teachers could educate their students more effectively, thus achieving a desirable balance between individual, school and national need.

Research shows that some professional developments do not meet the threshold needed to produce strong effects on their practice or on student learning (Darling-Hammond & Bransford, 2005; OECD, 2008; Wei, Darling-Hammond, & Adamson, 2010). E. Powell, Terrell, Furey, and Scott-Evans (2003) noted that professional development has both immediate and long-term impacts. They add that the ability to reflect gives teachers better skills to better evaluate the effectiveness of their practice. Harris, Cale, and Musson (2011) reported that professional development helped teachers to experience immediate positive impact on their perceptions of physical education. Some studies noted that the long-term impact of professional development has to do with developing greater confidence with their practice (Buczynski & Hansen, 2010; Harris et al., 2011; Harris & Sass, 2011).

### *Forms of Professional Development Programs*

Structural features that affect teacher learning include the form of the professional developmental activity, collective participation, and the duration of the activity (Haslam & Seremet, 2001).

For many teachers, professional development has been viewed as a task that generally involves a 1-day in-service training or workshop, with little or no expectation of what the teacher should do with the information or how the teacher should share the information with other colleagues (Garet et al., 2001; Guskey & Yoon, 2009). Birman, Desimone, Porter, and Garet (2000) argued that compared with activities of shorter duration, the activities of longer duration have more subject-area content focus, more opportunities for active learning, and more coherence with teachers' other experiences. This is further reinforced by Garet et al. (2001) assertion that longer professional development activities are more likely to provide opportunities for in-depth discussion of the content, pedagogy, and student conceptions/misconceptions. The authors also suggest that activities that extend over time are more likely to allow teachers more time to try out new practices in the classroom and obtain feedback on their teaching (Girvan et al., 2016; Sedova, Sedlacek, & Svaricek, 2016).

With regard to forms of professional development, TALIS (2013) included in its survey nine different choices: courses/workshops, education conferences or seminars, qualification program, observation visits to other schools, participation in

a network of teachers, individual or collaborative research on a topic, and mentoring and/or peer observation and coaching. These and other forms are also discussed in other studies (i.e., Birman et al., 2000; Erickson, Noonan, Brussow, & Carter, 2016).

Collective participation refers to the interest of groups of teachers from the same school, department, or class (or grade level) in professional development (Garet et al., 2001). With collective participation, the professional development programs are designed to help contribute to a shared culture of all participants. As a result, teachers from the same school, grade level, or subject develop a common understanding. Common themes might include instructional goals, methods, problems, and solutions (Diaz Maggioli, 2012).

### *Barriers and Support for Participating in Professional Development Programs*

Studies show that many challenges exist with regard to the effective implementation of professional development. The forms of support can consist of paid working time and substitutions (often discouraged for budget and organizational reasons), funding costs sustained by teachers, salary incentives, being a condition for salary progression and promotion, national policies and campaigns (such as the one in Sweden; OECD, 2005). The availability of collaboration, time, long-term commitment, and resources are important for the successful implementation of professional development (Maria & Garcia, 2016). Many believe that the level of intensity of participation in professional development activities are partially a function of the sort of backing that teachers get to participate in them or the type of barriers they encounter (Avalos, 2011; Jurasaitė-Harbišon & Rex, 2010; Mahmoudia, & Özkan, 2015). North Central Regional Educational Laboratory (NCREL) cited the need for the educational community to move away from prior professional development models that occur only on teacher workdays, after school or on weekends. The reallocation of resources—especially time—was stressed. Furthermore, the restructuring of the teacher's work to create "mental space" was highly recommended (Drage, 2010). Other cited barriers to their fulfillment include time, accessibility, staff motivation, marketing and advertising, and financial issues (Geldenhuis & Oosthuizen, 2015). Age, staff shortages, unsupportive managers, staff attitude, availability of programs, work pressure, family commitments, unsafe environments, and participation on own time are also identified as barriers (Drage, 2010; Fernandez-Manzanal et al., 2015).

### *Factors Affecting Variations in Professional Development Perceptions*

In TALIS 2008, one could analyze the disparity in the take-up of professional development within countries by examining participation with respect to teachers and schools

characteristics. The teacher and school characteristics chosen reflected the interest of policy makers in each country. With regard to the duration of professional development activities, on average, there was no statistically significant difference between male and female teachers across participating countries. On average, younger teachers received more professional development. This indicates that, on average, more-experienced teachers receive less days of professional development than less-experienced teachers. On average, teachers from private schools had 1 day less professional development than their public school counterparts. However, the difference is not statistically significant. A study by Amanulla and Aruna (2014) revealed that there are significant differences between male and female teachers, government and private schoolteachers, and more-experienced and less-experienced teachers in the mean scores of items related to professional development. Alade and Odebode (2014) showed that age, gender, educational qualification, and years of teaching experience had no significant influence on the benefits derived by teachers' from the Professional Development Program. Sağır (2014) showed mixed results of for the difference between male and female teachers regarding certain professional development needs. Based on seniority, no significant differences were observed in teacher views regarding their professional development needs in most categories.

### *Independent Variables of Teacher's Age, Gender, and Type of Schools*

In general, TALIS results showed that on average across participating countries, there is no statistically significant difference between male and female teachers with regard to days of participation (TALIS, 2013). A study by (Hustler, McNamara, Jarvis, Londra, & Campbell, 2003) showed that male teachers were slightly less likely to have a positive attitude toward professional development than their female counterparts although the difference was minimal.

International literature identifies teacher's age as a determinant of professional development take-up (Desimone, Smith, & Ueno, 2006; Richter, Kunter, Klusmann, Lüdtke, & Baumert, 2011). TALIS (2013) study showed that the on average, the amount of professional development that teachers received decreased with the age of the teacher. This indicates that on average less-experienced teachers receive more days of professional development than more-experienced teachers.

The TALIS (2013) results showed that on average teachers in public schools had 1 day more professional development than their private school counterparts, a difference that is not statistically significant. A study by the U.S. Department of Education (1997) concluded that public schoolteachers were more likely to participate in professional development activities. Their study showed that public schoolteachers were more likely to participate in professional development.

### *The TALIS Study*

In general, the TALIS survey, fairly represented the important features of teachers' professional development addressed by research. The survey addressed many variables. The variables include rate of participation, professional development activities and topics (including subject matters), and the experienced impact of professional development activities. It also included some others skills that are addressed by the school's human resource development requirements and continuous teachers' professional development. The survey also covered preferred teaching strategies, and experienced needs, and barriers to participation in professional development. Other variables covered the relevant characteristics of the school. The survey also required teachers to provide some descriptive background characteristics (i.e., age, gender, and experience). Teachers were also asked to portray their attitudes and beliefs with regard to professional development activities.

The conceptual framework developed by TALIS related to teachers' professional development hypothesized some associations between the form and content of professional development, with characteristics of teachers, schools, and the national education context (TALIS, 2013). It focused on continuous professional development in schools, which has a particular impact on co-operation within school teams, peer review, and human resources development. TALIS also asked teachers to declare the average number of teachers' days during the past year. To identify best practices in professional development, researchers then compare variability in program content with variability in these outcomes (Meissel et al., 2016).

## **Method**

### *Study Instrument and Distribution*

The TALIS survey asked teachers about their participation in professional development activities during the 12 months before the survey. The survey was designed in an orderly fashion. It included dimensions (and items or variables) covering the support teachers received for undertaking these professional development activities, their impact or effect, the areas of their schoolwork that they found most in need of further training and development, and the barriers they felt had paused some challenges to prevent them from undertaking additional development activities. Teachers were provided with 14 specific topics to identify which they have participated in. The topics included, approaches to individual learning, student evaluation and assessment practices, pedagogical competencies in teaching the subject field, and teaching students with special needs. For each of the 14 topics, they were asked to assign the appropriate impact on teaching score.

The TALIS survey also asked teachers about the form of support they got for their participation in the various professional development activities. The type of option supports included scheduling of activities, providing salary supplement,



and other non-monetary support (i.e., decreased teaching time, study leave, days off, etc.). To better understand participation in professional development and provide insight into potential policy implications, TALIS asked teachers to indicate barriers to their participation.

Abu Dhabi participated in TALIS 2013. The survey was available online in both Arabic and English. The Arabic version of the survey was developed by ADEC with validation and feedback as well as final approval from the OECD. A letter from the Director General of ADEC and the OECD went to the selected schools requesting their participation.

### Study Sample

The sample of schools and teachers were identified randomly by the OECD team. In each participating country, a minimum representative sample of at least 20 teachers from each of 200 schools was randomly selected. The international target population for TALIS included lower secondary teachers and their school leaders in both public and private schools.

For Abu Dhabi, teachers from both lower and upper secondary schools were included. Both public and private schoolteachers were asked to participate. Two types of public schools were involved: regular public schools and vocational public schools. A total of 4,941 teachers participated. A total of 2,703 teachers were female (55.1%) and 2,202 teachers were male (44.9%). This sample shows that a smaller proportion of teachers were female than in most other TALIS countries (compared with 68.1% in OECD countries). The mean age of teachers was 39.65 years, with a median of 39.0 years, and a mode of 40 years. Teachers from Abu Dhabi were on average younger than those in most other TALIS countries (relative to 42.9 years in OECD countries). On average, teachers from Abu Dhabi had spent fewer years teaching than those in most other TALIS countries (12.8 years relative to 16.2 years). A smaller proportion of teachers had completed a teacher education or training program than in most other TALIS countries (83.3% relative to 89.8%).

Teachers from both private and public schools were selected by the OECD to participate in TALIS. Around 2,352 teachers from public schools and 2,553 teachers from private schools participated in the study. From the Abu Dhabi public schools, 152 teachers came from the technical or vocational schools. With regard to teachers' age, among the teachers who declared their age, 91 were 25 years or younger, 375 were aged 26 to 29 years, 1,784 were aged 30 to 39 years, 1,324 were aged 40 to 49 years, and 608 teachers were 50 years or older.

### Research Questions and Analysis

In general, the TALIS study is complex survey sample data. The international TALIS (2013) documentation provides guidance on the appropriate analysis and estimation procedures. TALIS uses sampling weights with a complex

multi-stage cluster sample. Such sampling method requires appropriate software and analysis. The analysis incorporates the replication weights to obtain appropriate variance estimates.

This research was done to express the professional development programs for teachers from Abu Dhabi using the TALIS data. It is important to learn different approaches in different countries to get benefit from the good examples. In the field of education, Abu Dhabi has not received enough international attention. Results of this study would provide more insights in the professional development of teachers in an era of education reform in Abu Dhabi. This study seeks to answer the following questions:

**Research Question 1:** What are the teachers' perceptions of the most needed professional development activities?

**Research Question 2:** What are the forms of professional activities that produced the highest impact on teachers' knowledge for teaching?

**Research Question 3:** What are the main activities of professional development that teachers participated in?

**Research Question 4:** What are the teachers' perceived barriers to their participation in professional development?

**Research Question 5:** How the various teacher perceptions about professional development need and impact are effected by teacher features (gender, age, and experience)?

**Research Question 6:** How the various teacher perceptions about professional development need and impact are effected by school features (public/private) and (general/vocational)?

Predominantly, descriptive statistics will be used to explain the outcomes with regard to the study items. In addition, analysis of variance will be used to identify differences with regard to teachers' gender and age, type of school (public or private), and type of public school (regular or vocational).

With regard to age of teachers (five categories), MANOVA will be conducted across the variables of interest. MANOVA is used to determine whether there are any differences between independent groups on more than one continuous dependent variable. It should be added that MANOVA can detect differences too small to be detected through individual ANOVAs. MANOVA can also capture multivariate patterns if present (see Huberty & Olejnik, 2006).

As a final initiative, a teacher's focus group will be formed. The ADEC Cluster Managers will be asked to provide names of some distinguished teachers. Several teachers will be invited from the various schools in Abu Dhabi. The teachers will be asked to elaborate on the results of this study. Their feedback will be integrated with the recommendations of this research and its implications for ADEC or school policy makers.

**Table 1.** Perceived Needs for Professional Development Activities and Variations.

| TALIS codes | Perceived needs                                                               | Overall |       | Gender |        | School type |         | Public type |            |
|-------------|-------------------------------------------------------------------------------|---------|-------|--------|--------|-------------|---------|-------------|------------|
|             |                                                                               | M       | SD    | Male   | Female | Public      | Private | Public      | Vocational |
| 26A         | Knowledge and understanding of my subject field(s)                            | 1.51    | 0.782 | 1.50   | 1.50   | 1.42        | 1.59    | 1.52        | 1.32       |
| 26B         | Pedagogical competences in teaching my subject field(s)                       | 1.76    | 0.851 | 1.78   | 1.75   | 1.67        | 1.85    | 1.77        | 1.63       |
| 26C         | Knowledge of the curriculum                                                   | 1.51    | 0.805 | 1.50   | 1.51   | 1.41        | 1.60    | 1.51        | 1.52       |
| 26D         | Student evaluation and assessment practice                                    | 1.89    | 0.886 | 1.90   | 1.88   | 1.86        | 1.92    | 1.89        | 1.84       |
| 26E         | ICT skills for teaching                                                       | 2.21    | 0.960 | 2.18   | 2.23   | 2.11        | 2.13    | 2.21        | 2.14       |
| 26F         | Student behavior and classroom management                                     | 1.81    | 0.910 | 1.79   | 1.82   | 1.73        | 1.88    | 1.81        | 1.73       |
| 26G         | School management and administration                                          | 2.16    | 1.01  | 2.25   | 2.09   | 2.18        | 2.13    | 2.16        | 2.05       |
| 26H         | Approaches to individualized learning                                         | 2.06    | 0.917 | 2.07   | 2.04   | 2.03        | 2.09    | 2.06        | 2.05       |
| 26I         | Teaching students with special needs                                          | 2.46    | 1.09  | 2.49   | 2.44   | 2.51        | 2.41    | 2.47        | 2.12       |
| 26J         | Teaching in a multicultural or multilingual setting                           | 2.17    | 1.02  | 2.25   | 2.10   | 2.24        | 2.10    | 2.18        | 1.88       |
| 26K         | Teaching cross-curricular skills (e.g., problem solving, learning-to-learn)   | 2.07    | 0.918 | 2.07   | 2.06   | 2.05        | 2.08    | 2.07        | 1.99       |
| 26L         | Approaches to develop cross-occupational competencies for future work/studies | 2.30    | 0.963 | 2.30   | 2.30   | 2.29        | 2.31    | 2.30        | 2.32       |
| 26M         | New technologies in workplaces                                                | 2.47    | 1.00  | 2.44   | 2.50   | 2.37        | 2.57    | 2.47        | 2.47       |
| 26N         | Student career guidance and counseling                                        | 2.20    | 1.00  | 2.19   | 2.21   | 2.14        | 2.26    | 2.20        | 2.16       |

Note. TALIS = Teaching and Learning International Survey; ICT = information and communication technology. Shaded cells indicate ANOVA significant differences ( $\leq .05$ ).

## Results

### Professional Development Needs

In Abu Dhabi, in both public and private schools, teachers are not explicitly obliged to engage in professional development activities. TALIS asked teachers to provide their perception of the type of professional developments needed. The survey included 14 topics or activities as shown in Table 1. Teachers were asked to rate their development need in various aspects of their work. A 4-point scale from “low level of need” to “high level of need” was used. The aspect of teachers’ work that was, on average, most frequently rated by teachers as an area of high development need in Abu Dhabi was “new technologies in workplaces” and “teaching students with special needs.” Other aspects of teachers’ work in which, on average, sizable proportions of teachers reported having a high level of development need were “approaches to develop cross-occupational competencies for future work/studies” and “information and communication technology (ICT) skills for teaching.” In contrast, the aspects of teachers’ work that, on average, received lowest scores were “knowledge and understanding of my subject field(s)” and “knowledge of the curriculum.”

### Professional Development Activities’ Impacts

TALIS asked teachers to report on the impact of their professional development activities on their own development as teachers. The survey first asked teachers whether they have participated in any of the previously mentioned 14 professional need activities. For those teachers who provided a “yes” reply,

the survey further asked them to identify the impact of participating in those activities on teaching and learning. Teachers were asked to rate their perception on a 4-point scale from *low level of impact* to *high level of impact*. Because TALIS reports teachers’ self-perceptions, the results should be treated with some caution, especially if teachers’ perception of impact is to reflect the effectiveness of the professional development activities they participated in. Nevertheless, we could presume that if teachers feel that a certain professional developmental activity has had limited impact, this is likely to affect their decisions regarding future participation in that activity.

Results from Table 2 show that the three highest professional development activities that teachers participated in are related to “student evaluation and assessment practices” (84.5%), “pedagogical competencies in teaching own subject” (79.9%), and “student behavior and classroom management” (78.1%). Table 2 also shows the mean scores of the general perceived impact of the activities teachers participated in on teaching. The teacher’s consistent positive view of the impact of all types of professional development activities is noticeable (all values above 3.0). On average, in Abu Dhabi, teachers reported that the highest impact was related to “knowledge of the curriculum,” and “knowledge and understanding of my subject field(s).” It should be noted that those two activities received the lowest perception need scores as shown in Table 1.

### Perceived Barriers to Their Participation in Professional Development

TALIS asked teachers about the barriers to take more professional development. It asked teachers to indicate the reasons

**Table 2.** Perceived Impacts of Professional Development Activities (if Taken) and Variations.

| TALIS codes | Perceived impacts                                                             | Overall                        |       | Gender |        | School type |         | Public type |            |
|-------------|-------------------------------------------------------------------------------|--------------------------------|-------|--------|--------|-------------|---------|-------------|------------|
|             |                                                                               | Mean impact and % participated | SD    | Male   | Female | Public      | Private | Public      | Vocational |
| 22A2        | Knowledge and understanding of my subject field(s)                            | 3.49 (74.8%)                   | 0.630 | 3.53   | 3.46   | 3.53        | 3.46    | 3.50        | 3.31       |
| 22B2        | Pedagogical competences in teaching my subject field(s)                       | 3.41 (79.9%)                   | 0.663 | 3.47   | 3.36   | 3.44        | 3.38    | 3.42        | 3.26       |
| 22C2        | Knowledge of the curriculum                                                   | 3.55 (69.5%)                   | 0.650 | 3.60   | 3.51   | 3.58        | 3.52    | 3.56        | 3.37       |
| 22D2        | Student evaluation and assessment practice                                    | 3.45 (84.5%)                   | 0.666 | 3.48   | 3.42   | 3.47        | 3.43    | 3.45        | 3.28       |
| 22E2        | ICT skills for teaching                                                       | 3.38 (76.9%)                   | 0.694 | 3.54   | 3.47   | 3.52        | 3.48    | 3.50        | 3.29       |
| 22F2        | Student behavior and classroom management                                     | 3.39 (78.1%)                   | 0.719 | 3.43   | 3.37   | 3.41        | 3.38    | 3.40        | 3.29       |
| 22G2        | School management and administration                                          | 3.27 (40.5%)                   | 0.745 | 3.28   | 3.29   | 3.29        | 3.27    | 3.28        | 3.10       |
| 22H2        | Approaches to individualized learning                                         | 3.24 (66.2%)                   | 0.716 | 3.28   | 3.22   | 3.28        | 3.20    | 3.25        | 3.00       |
| 22I2        | Teaching students with special needs                                          | 3.08 (41.5%)                   | 0.814 | 3.14   | 3.04   | 3.12        | 3.03    | 3.09        | 3.00       |
| 22J2        | Teaching in a multicultural or multilingual setting                           | 3.26 (43.5%)                   | 0.731 | 3.29   | 3.26   | 3.29        | 3.26    | 3.27        | 3.46       |
| 22K2        | Teaching cross-curricular skills (e.g., problem solving, learning-to-learn)   | 3.30 (68.3%)                   | 0.703 | 3.33   | 3.28   | 3.34        | 3.25    | 3.31        | 3.20       |
| 22L2        | Approaches to develop cross-occupational competencies for future work/studies | 3.37 (59.9%)                   | 0.675 | 3.40   | 3.35   | 3.41        | 3.32    | 3.37        | 3.36       |
| 22M2        | New technologies in workplaces                                                | 3.37 (69.1%)                   | 0.705 | 3.41   | 3.34   | 3.45        | 3.27    | 3.37        | 3.41       |
| 22N2        | Student career guidance and counseling                                        | 3.40 (52.4%)                   | 0.711 | 3.42   | 3.38   | 3.44        | 3.35    | 3.41        | 3.13       |

Note. TALIS = Teaching and Learning International Survey; ICT = information and communication technology. Shaded cells indicate ANOVA significant differences ( $\leq 0.05$ ).

that had prevented them from enrolling in more activities. Such information is thought to provide more information for better policy making with regard to professional development with regard to its make-up. They were given seven options to choose from. Table 3 provides the responses given by Abu Dhabi teachers. Results show that in general, the two factors related to “too expensive/unaffordable,” “lack of incentives,” and “professional development conflicting with work schedule” received the highest scores.

Abu Dhabi also reports that “conflict with work schedule” was most frequently reported as a barrier (42% of teachers). The conflict with work schedule would find the timing of certain professional development activities to be not appropriate. Family, responsibilities were reported as a barrier by 23.8% of teachers on average. Almost the same percentage of those who did not participate at all in professional development reported this as a barrier. In Abu Dhabi, teachers have the option of enrolling in various professional development activities for free, and during regular working hours.

As further inquiries, TALIS asked teachers about the type of support received for participating in professional development. Approximately 54.9% of Abu Dhabi teachers recorded that they participated in certain professional development activities during regular working hours. Approximately 81.2% of teachers noted that they did not receive a salary supplement for activities outside working hours. In addition, only 12.9% of teachers noted that they

received non-monetary support for participating in certain professional activities outside working hours.

### *Type of Professional Development and Durations*

With regard to impact of professional developments types, it is assumed that teacher responses are direct or indirect reflections of the general experience. Table 4 shows nine types of professional development activities that teachers were asked to state whether they have participated in, during the current year. The four types that received the highest percent participation were courses and workshops (83.6%), mentoring and coaching (63.0%), education conferences or seminars (51.6%), and individual or collaborative research (50.8%). The two types that received the lowest participation scores were qualification program (16.6%) and observation visits to other schools (29.9%). The table also shows that courses and workshops (11.66 days) had the highest mean for the duration of the professional development type.

### *Teacher Gender Differences*

Analysis of variance was performed to see whether there are significant differences between female and male teachers with regard to their perceived needs for professional development. Results in Table 1 show that there are no significant differences ( $\leq 0.05$ ) except with regard to three professional

**Table 3.** Perceived Barriers for Participation in Professional Development Activities and Variations.

| TALIS codes | Perceived barriers                                       | % agree or strongly agree | Overall |       | Gender |        | School type |         | Public type |            |
|-------------|----------------------------------------------------------|---------------------------|---------|-------|--------|--------|-------------|---------|-------------|------------|
|             |                                                          |                           | M       | SD    | Male   | Female | Public      | Private | Public      | Vocational |
| 27A         | I do not have the pre-requisites                         | 2.72                      | 1.29    | 0.575 | 1.27   | 1.31   | 1.21        | 1.37    | 1.30        | 1.18       |
| 27B         | Is too expensive/unaffordable                            | 38.0%                     | 2.27    | 0.895 | 2.25   | 2.29   | 2.25        | 2.29    | 2.27        | 2.24       |
| 27C         | There is a lack of employer support                      | 37.5%                     | 2.30    | 0.944 | 2.20   | 2.38   | 2.25        | 2.35    | 2.30        | 2.41       |
| 27D         | Professional development conflicts with my work schedule | 42.8%                     | 2.40    | 0.894 | 2.31   | 2.47   | 2.44        | 2.36    | 2.39        | 2.68       |
| 27E         | I do not have time because of family responsibilities    | 23.8%                     | 2.02    | 0.891 | 1.86   | 2.16   | 2.03        | 2.01    | 2.03        | 1.92       |
| 27F         | There is no relevant professional development offered    | 36.8%                     | 2.30    | 0.894 | 2.19   | 2.39   | 2.26        | 2.34    | 2.29        | 2.51       |
| 27G         | There are no incentives for participating                | 53.7%                     | 2.66    | 0.983 | 2.58   | 2.72   | 2.77        | 2.57    | 2.66        | 2.69       |

Note. Shaded cells indicate ANOVA significant differences ( $\leq .05$ ).

**Table 4.** Percent (YES) Participation in Professional Development Types and Variations.

| TALIS codes | Type of professional development activities      | Overall % (YES) | Overall       |        | Gender |        | School type |        | Public type |  |
|-------------|--------------------------------------------------|-----------------|---------------|--------|--------|--------|-------------|--------|-------------|--|
|             |                                                  |                 | Mean duration | Male   | Female | Public | Private     | Public | Vocational  |  |
| 21A1        | Courses and workshops                            | 83.6%           | 11.66         | 86.30% | 81.34% | 92.66% | 75.64%      | 93.33% | 81.88%      |  |
| 21B1        | Education conferences or seminars                | 51.6%           | 4.48          | 56.40% | 47.72% | 61.51% | 42.52%      | 60.50% | 75.84%      |  |
| 21C1        | Observation visits to other schools              | 29.9%           | 3.01          | 32.18% | 28.13% | 40.35% | 20.22%      | 42.57% | 9.40%       |  |
| 21D1        | Observation visits to business or organizations  | 31.7%           | 3.21          | 34.75% | 29.31% | 45.91% | 20.27%      | 47.55% | 22.82%      |  |
| 21E1        | In-service training courses in business premises | 35.0%           | 6.68          | 39.30% | 31.39% | 48.53% | 18.57%      | 50.31% | 22.82%      |  |
| 21F1        | Qualification program (e.g., a degree program)   | 16.6%           | —             | 19.80% | 14.06% | 19.97% | 13.85%      | 19.67% | 19.59%      |  |
| 21G1        | Participation in a network of teachers           | 45.9%           | —             | 50.93% | 41.81% | 51.56% | 45.19%      | 51.95% | 45.95%      |  |
| 21H1        | Individual or collaborative research             | 50.8%           | —             | 59.28% | 43.88% | 59.95% | 42.27%      | 60.24% | 56.76%      |  |
| 21I1        | Mentoring and coaching                           | 63.0%           | —             | 67.60% | 59.28% | 74.48% | 52.25%      | 76.00% | 54.05%      |  |

Note. TALIS = Teaching and Learning International Survey.

development activities. Female teachers perceived more need for ICT skills for teaching ( $F = 3.764, p \leq .049$ ), whereas male teachers perceived more need for school management and administration ( $F = 26.937, p \leq .001$ ) and more teaching in a multicultural or multilingual setting ( $F = 25.988, p \leq .001$ ).

Analysis of variance results of the effect of gender on professional development impact revealed some significant differences between female and male teachers. As Table 2 shows, significant differences were observed between male and female teachers with regard to the perceived impact on teaching and learning of nine of those activities. Three activities were related to the subject and curriculum: knowledge and understanding of my subject field(s), pedagogical competencies in teaching my subject fields(s), and knowledge of the curriculum. One activity

was related to ICT skills. The other activities were related to student evaluation and assessment practices, approaches to individualized learning, teaching students with special needs, developing cross-occupational competencies, and new technologies in workplaces.

Results in Table 3 show that significant differences exist between male and female teachers with regard to certain barriers related to professional development. For both male and female teachers, the highest score was assigned to the barrier related to “there are no incentives for participation.” Male teachers assign significantly higher barrier scores to the following five barriers: lack of employer support, conflict with work schedule, not having time because of work schedule, family responsibilities, and lack of relevant provisional development offered.



### Differences Between Public and Private Schoolteachers

With regard to perception of needs for professional activities, Table 1 shows that significant differences exist between teachers from public and private schools for 11 out of 14 activities. The activities that do not show significant differences are related to school management and administration, teaching cross-curricular skills (e.g., problem solving and learning to learn), and approaches to develop cross-occupational competencies for future work or future studies. Private schoolteachers show greater needs for almost all activities except for the activity related to teaching students with special needs; for this, public schoolteachers showed lower perceived needs.

Analysis of variance shows that teachers from public and private schools show significantly different perceptions of the impact of professional development activities (Table 2). Significant differences are recorded with regard to three out of the 14 activities. No significant differences were recorded with respect to activities related to student behavior and classroom management, school management and administration, and teaching in a multicultural or multilingual setting. It is interesting to note that teachers from public schools consistently assign higher impact scores with regard to all professional development activities they have taken.

Table 3 shows that perceptions of professional development barriers are significantly different between teachers from public and private schools with regard to five aspects: "I do not have the pre-requisites," "there is a lack of employer support," "professional development conflicts with my work schedule," "there is no relevant professional development offered," and "there are no incentives for participating." Teachers from private schools assign higher barrier scores to not having pre-requisites, lack of employer support, and no relevant professional development offered. On the contrary, teachers from public schools assign higher barrier scores to conflict with work schedule, and lack of incentives for participating.

### Differences Between General Public and Vocational Public Schoolteachers

With regard to the perceived needs for professional development activities, Table 1 shows that significant differences exist between teachers from regular public schools and vocational schools with regard to three activities only. The three activities are related to knowledge and understanding of my subject field(s), teaching students with special needs, and teaching cross-curricular skills (e.g., problem solving and learning to learn). For all three activities, teachers from regular public schools score relatively much higher needs.

Table 2 shows that teachers from regular public schools and vocational public schools show significant differences in impact for only six professional development activities. The

**Table 5.** MANOVA Results With Regard to Teacher's Age.

|                                                               | Number of variables | Wilks's Lambda | F value | p value |
|---------------------------------------------------------------|---------------------|----------------|---------|---------|
| Perceived needs for professional development activities       | 14                  | 0.919          | 6.386   | .001    |
| Perceived impact of professional development activities       | 14                  | 0.853          | 1.257   | .098    |
| Perceived barriers for professional development participation | 7                   | 0.939          | 10.002  | .001    |

activities with significant differences for the two types of schools are knowledge and understanding of my subject, pedagogical competencies in teaching my subject field(s), knowledge of the curriculum, student evaluation and assessment practices, approaches to individualized learning, and student career guidance and counseling. Interestingly, teachers from regular public schools show higher impact scores for all professional activities.

Table 3 results show that teachers from regular public schools and vocational public schools show significant differences for only three professional development barriers: not having the pre-requisites, professional development conflicting with work schedule, and lack of relevant professional development offered. Teachers from regular public schools assign higher barrier scores to not having the pre-requisites, whereas teachers from vocational schools see that conflict with work schedule and lack of relevant professional development offered pose larger barriers.

### Age Group Differences

Table 5 provides the general MANOVA results. We used MANOVA to test the null hypothesis that the perceived needs for professional activities are the same across the five teachers' age groups. The Wilks's Lambda provides a value of 0.919 with an *F* value of 6.386, which is significant at the .001 level. As a result, we followed the analysis up with a series of one-way ANOVAs to see individual differences between the 14 professional development needs. Significant results were resulted between almost all age groups. The interesting thing here is that for most of the 14 variables, as the teacher becomes older, the mean score related to perceived need goes down (negative correlation). However, there is a positive relationship between the teacher's age and perceived need only with regard to two professional development activities. These variables include ICT skills for teaching and new technologies in workplaces.

With regard to perceived impact, MANOVA test yields a Wilks's Lambda of 0.853 with an  $F$  value of 1.257, which is not significant at the .05 level. MANOVA test reveals a significant Wilks's Lambda value of 0.930 ( $F = 10.002$ ) for the perceived barriers to participate in professional development activities for the different teachers' age groups. The series of one-way ANOVAs show that significant differences exist with regard to teachers' age for all the seven barriers to professional development.

In general, results show that as teacher's age goes up, only two perceived mean barriers go down: "I do not have the prerequisites," and "there is a lack of employer support." With regard to the other barriers, mixed results are witnessed. For all seven barriers, the highest perceived barriers are claimed by teachers in the age groups 25 to 29 and 30 to 39 years. The lowest perceived barriers are witnessed with teachers who are aged 25 years or less, and those who are aged 40 years or above.

On average, among Abu Dhabi teachers, the amount of professional development that teachers received decreased with age. If age of a teacher is associated with his or her work experience as a teacher, then this finding indicates that, on average, less-experienced teachers received more days of development than more-experienced teachers. With regard to age, significant differences were observed with regard to 10 of the 14 professional development activities. For all four activities on this construct, no significant differences with regard to age were related to teaching in a multicultural or multilingual setting ( $F = 1.167, p \leq .203$ ), approaches to develop cross-occupational competencies for future work or future studies ( $F = 1.304, p \leq .080$ ), new technologies in workplaces ( $F = 1.1261, p \leq .109$ ), and student career guidance and counseling ( $F = 1.348, p \leq .057$ ). In general, for almost all other professional development activities, as age of teachers increase, the perceived level of need tends to go down.

Analysis of variance with regard to age of teachers and the perceived impact of professional activities revealed the existence of significant differences with regard to six activities only. These activities were related to knowledge and understanding of my subject field(s)/impact, pedagogical competencies in teaching my subject fields(s)/impact, student evaluation and assessment practices/impact, ICT skills/impact, student behavior and classroom management/impact, and developing cross-occupational competencies/impact. Again, in general, when age increases, the perception of impact of professional activities decreases.

Older teachers assign significantly higher scores to almost all listed items than younger teachers (except for professional development being too expensive and unaffordable) where no significant difference is recorded.

## Discussions

For Abu Dhabi, many of the teacher professional development programs were meaningful and relevant because they

had transferrable impact in the classroom and a focus on guided practice. Teachers felt that programs related to knowledge of the curriculum, knowledge and understanding of one's subject field, and student evaluation and assessment practices had the greatest impacts. Out of the 14 professional need activities, teachers also gave a high score for "teaching students with special needs." This finding is significant, because TALIS targets population did not include teachers who only teach students with special learning needs. It is probably a reflection of current trends in educational policy particularly in Abu Dhabi. The first trend deals with the integration (or inclusion) of students with special learning needs in mainstream schools (inclusive education). The other trend deals with the growing emphasis on equity. This result is an indication that teachers from Abu Dhabi do not feel fully prepared to cope with these challenges.

As further simple correlation analysis reveals a negative overall correlation of  $(-.705)$  existing between teachers' overall perception of the needs for professional development and the impact of professional development items. As the perceived need decreases, the perceived impact increases. The negative correlation between teachers' perceived need for and perceived impact of professional development should be noted by ADEC and school decision makers. For Abu Dhabi, results might indicate the lack of teacher understanding of what professional development is needed.

Results showed that male teachers perceived more need for school management and administration, and more teaching in a multicultural or multilingual setting. Most teachers come from other cultures other than the United Arab Emirates. The findings are consistent with literature indicating that teachers' understanding of school management, in fact, is often dependent on their knowledge of students' culture and backgrounds, language proficiency, and academic needs. Wong and Snow (2000) indicated that teachers must understand student culture and backgrounds, prior experiences, culture, and language diversity to successfully teach them, which is important for classroom management practices to be successful and appropriate for the students' needs.

Interestingly, the focused group discussions noted the fact that teachers in private schools in Abu Dhabi may undertake professional development, and pay for them by themselves, to increase the possibility of obtaining a permanent position in public schools. Many teachers thought that such professional development activities improve the rating of teachers on which the appointment to public schools is based. Policy makers may wish to explore approaches to engage teachers and procure their investment in the process, perhaps by accepting recommendations from teachers or teacher committees about staff development priorities, setting aside time to meet with teachers about their professional development learning plans, or speaking regularly to teachers to articulate a vision for how the administrative professional development priorities can enhance teachers' performance and even job satisfaction.

The most significant barrier to participating in professional development was related to conflict with work schedule. Literature on professional development frequently addresses scheduling and logistical issues, and such concepts must be considered in any discussion of what it means to have a sustained professional learning community (Witte & Jansen, 2016) in which teachers are able to be learners in an ongoing context. Family responsibilities were reported as a barrier by 23.8% of teachers on average.

There is a significant negative correlation between the extent to which teachers reported a lack of incentives or suitable professional development and the amount of professional development they actually had. In Abu Dhabi, on average, teachers who reported a lack of suitable incentives of participating in professional development actually participated in a smaller number of days of professional development. As a result, there is a strong indication that there is high association between the perceived lack of suitable development opportunities and the amount of professional development teachers enroll in. The lack of incentives and lack of suitable professional development seem to be relatively acute in Abu Dhabi.

The teacher's focus group discussions revealed a lack of clear professional development program philosophy, standards, and goals. They also revealed a lack of deep and meaningful involvement on the part of teachers in professional development planning, implementation, and evaluation. Again, references to the importance of a strong structure for professional development programming, and the necessity of teachers being involved in the planning, implementation, and evaluation of professional development existed including Bredeson (2003) and NSDC (2001).

The teachers' focus group stressed that relatively little professional development program evaluation was conducted to determine the value professional development has on teachers' perception not only of the impact on their teaching practice but also of the effect on student achievement. This point is raised by other researchers too (Meissel et al., 2016; Polly et al., 2015). The study recommends that using need assessment tools such as the NSDC's (2001) Standards for Staff Development. In addition, ADEC and school policy makers should conduct a need assessment regarding teachers' professional development needs, and evaluate professional development participation for impact regarding effective teaching practices.

## Conclusions, Implications, Future Research Directions, and Limitations

ADEC should seek to balance the academic and emotional learning needs of teachers, particularly those who are new to Abu Dhabi and may be undergoing significant acculturation and adjustment experiences. If policy is not responsive in this manner, teachers find themselves under increased burden, and they are unable to attend to what they perceive as

the much more important task of understanding their students' cultural backgrounds, family and home situations, and emotional needs. Increased time for teachers from other nationalities to gain better cultural understanding would allow teachers to devote time to supporting students in a more effective manner.

Policy makers should allow for some participant choice in determining professional development offerings. Although research suggests that teachers need a core set of knowledge in specific topics, particularly with respect to diverse learners (Ballantyne, Sanderman, & McLaughlin, 2008), this study suggests that teachers find most opportunity for engagement when they have the chance to select among a menu of topics and to customize their professional development experiences to their experience, prior knowledge, and student populations. This may be accomplished by allowing participants to complete various differentiated activities, providing a choice of face-to-face workshops, or some other means such as online workshops (Dede, Ketelhut, Whitehouse, Breit, & McClosey, 2009; Maria & García, 2016). Within Abu Dhabi schools, this study found the need to more effectively plan, implement, and evaluate professional development program philosophy and activities and to include and engage teachers in these processes. Teachers shared that they are not meaningfully involved in the processes of professional development planning, implementation, and evaluation. This finding was consistent with that of previous research that details the value of involving teachers in these processes (Bredeson, 2003).

The responses of Abu Dhabi teachers in this TALIS study suggest that teachers appeared to identify classroom management as an important topic for staff development. This is also mirrored in the literature, where researchers suggest that classroom management may, in fact, have a number of other components which affect students' ability to successfully follow requirements and achieve (Polly et al., 2015; Mastropieri & Scruggs, 2010).

It should be noted that the Abu Dhabi education system has a unique setting, especially with regard to public schools. Boys and girls are segregated starting from the fifth grade. According to ADEC records in 2015, in girl public schools, female UAE national teachers comprise 47.78% of the female teacher's workforce. On the contrary, in boys' schools, male UAE national teachers comprise less than 13.35% of the total male teacher workforce (86.64% are foreign UAE teachers). According to ADEC 2015 records, for the male teachers from public schools, teachers come from more than 118 nationalities. As a result, Abu Dhabi has increasing numbers of culturally and linguistically diverse teachers. Teachers whose professional development may not have addressed those students' particular needs often find that their skills and current knowledge base are not sufficient to help students. Therefore, an increasingly important area of teacher education and professional development involves providing teachers information about cultural and linguistic

diversity, as it affects both typical and atypical learners, helping teachers to identify effective teaching practices to meet the needs of students.

Results showed that teachers participated most in professional development programs where a group of colleagues from their school or subject group actively communicated with each other. The researchers recommend making social networking (face-to-face or online) a more frequent part of school activities and professional development structures. As several teachers also indicated, some of their most formative learning experiences came in the form of peer-to-peer interactions with colleagues. Mentoring activities, pairing teachers for work on particular tasks or for participation in particular professional development activities—all of these may help to increase opportunities for teachers to interact within contexts, providing the opportunity for an exchange of knowledge. The results also suggest that school leaders make an effort to consciously expand their expectations and their conceptual frameworks so as to view such informal social networking within the context of its relationship to technology. It may be easy for administrators to think that faculty meetings should not include time to socialize or that such socializing distracts everyone from focusing on school goals and objectives.

Some related research addressed the causal links between teachers' continuing professional development, their active participation in professional development, and their beliefs about learning and teaching (de Vries, van de Grift, & Jansen, 2013). Because the TALIS survey includes variables related to teachers' beliefs and their need to participate in professional development, future research should try to better understand the causal linkage between participation in professional development, activities, and teachers' beliefs about learning and teaching.

For Abu Dhabi schools, especially public schools, most professional development programs are centralized and mainly offered through ADEC. Future research should look into the question of the implications of this system-level factor.

Although TALIS did not directly reference online learning experiences, the researchers recommend that practitioners, as well as researchers, continue to explore feasibility of, and teachers' responses to, online professional development initiatives. For Abu Dhabi, the lack of teacher feedback or response to online professional development may, in fact, be more reflective of a lack of exposure to online professional development opportunities, rather than a negative set of experiences in actual online experiences. The introduction of web-based information technology has presented new opportunities for offering professional development and knowledge online (Fore, Feldhaus, Sorge, Agarwal, & Varahramyan, 2015; Girvan et al., 2016; Kao, Tsai, & Shih, 2014; Maria & Garcia, 2016). With their feature of no time or space limitations, web-based resources can provide teachers with a more flexible way of pursuing professional development. While enhancing teachers' willingness to participate in online courses, it can

also motivate them to gradually change their teaching from traditional ways (e.g., face-to-face lectures, single location) to a more flexible and adjustable approach based on individual needs (Hartley, 2010). Future research should try to link some TALIS variables with other variables related to web-based professional development of teachers.

Because the TALIS research involved teachers from only lower and upper secondary schools, the researcher recommends replicating this study to determine the generalizability and relevance of the findings across other schools and teacher or student populations. The new studies would provide useful information to supplement, corroborate, or further contextualize the findings of this study. In addition, future research may replicate this study with a larger teacher population, so as to determine whether the same patterns, themes, and findings are consistent across a larger group of teachers (situated either in one school or in a cluster of schools).

The study's findings suggest that the structure and type of professional development offered in schools can affect the degree to which teachers feel professional development meets their needs. It is also recommended that researchers conduct further research on restructuring of school-based professional development opportunities so as to further teachers' engagement, investment, and ability for long-term involvement with a particular issue.

For Abu Dhabi, this study has given rise to important questions that could be addressed by teachers and researchers working in partnership to expand the knowledge base in the field of teacher professional development:

- Under what conditions does teacher learning that is associated with professional development get transferred to the classroom?
- What are the effects on student learning of teachers who do not have backgrounds in the relevant disciplines to teach students?
- How does professional development in the area of cultural understanding affect the way teachers teach children from culturally and linguistically diverse backgrounds? What adjustments do teachers make as a result of this knowledge?

The current study used teacher's age and gender, and type of school being public or private as the independent variables. Future studies should further consider teacher's teaching experience, subject taught, and school size and school location. Related research considered these factors significant in measuring the effectiveness of professional development (U.S. Department of Education, 1997).

Although the study describes teacher's perceptions about professional development, it cannot describe school climate, achievement, or teacher knowledge/skills in any more general context. The message for ADEC is that to provide professional development which aligns with teachers' perceptions of their needs, and procures the investment of



the teachers participating, it is important that schools and administrators consider the diverse backgrounds of teachers as well as their students, provide inter-related and numerous opportunities for interaction among professional colleagues, and strive to create a school environment which maximizes opportunities for collaboration as well as for learning.

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