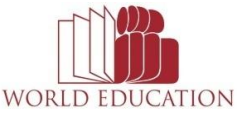
THE HASHEMITE KINGDOM OF JORDAN
EDUCATION REFORM FOR KNOWLEDGE ECONOMY II (ERfKE II)



Assessment of KG Teachers'/ Supervisors' training on National Curriculum and Working with Young Children and subsequent classroom practices

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The Hashemite kingdom of Jordan

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Content

Chapter 1: Background

1.1 Background and Context

1.1.1 Brief Overview of Early Childhood Education (ECE) in Jordan

Early Childhood Education (ECE) in the public sector is relatively new to Jordan, although private sector kindergartens (KGs)[1], established through voluntary organizations and religious schools, have a remarkable constancy dating back the 1860s. With this historical precedent, Jordanian public education reforms have placed impressively strong emphasis on early childhood development. The kingdom was among the first in the region to adopt a legal framework for ECE from the very early stages in the development of its education reform program. Immediately following the First National Conference for Education Development in 1987[2], Jordan developed and adopted Education Act No. 3 (1994), which established kindergarten as a formal, non-compulsory educational cycle for the age group 4-6 years. Additionally, as of 2007, Jordan was one of six countries in the world to develop an ECD framework along with indicators and benchmarks to measure and evaluate progress[3]. Although the first 15 public KG classrooms were only established in 1999, great strides have been made to steadily expand the number of KG classrooms in MoE schools to a total of 983 KG classrooms and 950 trained KG public school teachers at the start of the 2011-2012 school year.[4]

1.1.2 ECE in Jordan under ERfKE

In July 2003, the Government of Jordan (GoJ) launched an ambitious multi-donor supported Education Reform for the Knowledge Economy (ERfKE) project. The goal of the project was to re-orient the education policies and programs in line with the needs of a knowledge-based economy, to improve the physical learning environment in most schools, and to promote early childhood education. This first phase of program was from 2003 to 2009, and was closed in June 2009. In the second phase of ERfKE (2009-2015), the aim of the project is to strengthen and institutionalize the reforms introduced under ERfKE I, with a particular focus on school level implementation, teacher quality, employment, placement and professional development policies. ERfKE II is also working strengthen the institutional capacity of MoE in policy, strategic planning and monitoring and evaluation and will fine tune the curriculum and student assessment to ensure alignment with the knowledge based economy.

[1] According to the UNESCO *Jordan Early Childhood Care and Education (ECCE) Programmes* report (2007, 4) approximately 77% of all children attending KG are enrolled in private KGs, 5% are enrolled in public KGs, and 18% in the NGO sector.
[2] The First National Conference for Education Development set the groundwork for establishing Jordan's fundamental philosophical bases and general objectives for education under the Provisional Education Act No. 27.
[3] UNESCO ECCE 2007.
[4] Source – MOE presentation.

To achieve its ambitious objectives, ERfKE II targets five integrated and comprehensive components: 1) Establishment of a school- and directorate-base reform system; 2) Adoption of policy, planning, M&E and organizational change; 3) Review, development and alignment of teaching and learning resources with ERfKE II; 4) Expansion of program development in early childhood, vocational and special education; and 5) Improvement of education facilities (MoE, 2010).

The ECD sub-component in ERfKE II is drawn from the Second Plan of Action of the National Strategy for Early Childhood Development (2009-2013)[5] with aims for greater equity in access to ECD, improved quality of programs and services, and increased parental and community involvement. The component consists of four areas of intervention: (i) increase institutional capacity; (ii) professional development of KG teachers; (iii) expansion of KGs for the poor; and (iv) greater public awareness and understanding.

The ECD strategy includes fourteen areas[6] with a primary aim to develop a child's readiness to learn. The strategy maps the early childhood period, categorizing the period from birth through 8 years of age into four basic stages: **pregnancy** (birth to under 1 year); **nursery** (1-3 years); **preschool** (4-5 years); and **early basic** (6 to 8 years). Stages before preschool are under the Ministry of Social Development (MSD), while preschool and early elementary are under the direction of the MoE. Under the current system, KG is considered a formal, but non-compulsory stage in the education system. KGs in Jordan can include up to two years (**KG 1** – run by the private sector, and **KG 2**, run by both public and private). The goal, as expressed for by the national strategy, is to create a balanced learning environment for all children, addressing the physical, cognitive, spiritual, and emotional aspects that will enable young students to develop healthy habits, social relations, positive attitudes and appreciation of school life and learning.[7]

The KG curriculum, first developed in 2003[8],while before that KG teachers were using KG teachers' Guide which was developed in 1993 as curriculum guide, was redeveloped in 2003 with the aim to increase cultural heritage knowledge, improve informed decision-making

[5] This strategy, sometimes referred to as the *National Strategy for Childhood,* builds upon and is linked to a combination of initiatives: 1) the ECE development strategy prepared by UNICEF and the National Council for Family Affaires (2000), 2) the National Strategy for Early Childhood Development for the years (2004-2014) which was prepared by the National Council for Family Affairs, and 3) the Education Strategic Plan for the years (2009-2013).

[6] Planning, administration, legislation, health care during pregnancy, child care in nurseries, pre-school education, basic education in the first three grades, family education and the community, children with special needs, social security, curricula and programs, health services, children's culture, the role of media, and human resources.

[7] Abu Ali, Mahmoud. (2010). Kindergartens' Policies Review Report (MoE Jordan/USAID)

[8] World Data on Education 2010/11, p 10

abilities, enhance inter-personal communication skills, develop creativity and capabilities and enable children to exercise their right to express their views and to participate more actively[9]. Further revisions to the curriculum were completed in 2007 and include step-by-step instructions for teachers along with detailed activity sheets that cover ten themes and over 1,000 activities that are implemented over the course of the school year[10]. Student performance is assessed in terms of participation in the aforementioned activities as well as cognitive, social, spiritual, artistic, and emotional growth. Additionally, teachers are trained to make greater efforts to include parental involvement and to provide regular information to parents on their child's progress and needs.

1.1.3 Professional Development for KG Educators

Teachers are considered the most important element in the education process at all levels, and the MoE has placed strong emphasis on the professional development of KG teachers and supervisors. In 2009 the Teachers' Professional Development Policy and Strategic Framework document was developed to improve teachers' pre- and post- employment competencies by integrating teacher preparation, professional development, utilization and career development policies and practices[11]. The Policy and Strategic Framework identifies a number of strategies to better prepare teachers, perhaps most important of which is the establishment of a training center as well as linking professional development with salaries and promotions.

The MoE has implemented a series of in-service training programs under ERfKE I and II which include but are not limited to the following training programs:

- **National Curriculum (NC)**: This is a 54 hour training program with the goal to enhance KG teacher and supervisor abilities to implement the national interactive curriculum which has been developed based on the child development criteria, and distributed to all kindergarten in the year 2007/2008.
- **Working with Young Children, WYC (Wisconsin)**: This is a 160 hours training program adapted from Wisconsin University to the Arab context; WYC is the only training program linked to teachers' ranking system.
- **Kidsmart Program**: This is a 40 hour training program with the goal to provide all children equal opportunities to acquire technology skills regardless of cultural and social differences.
- **HIKAYAT SIMSIM**: This educational multi-media program aims to enrich a child's knowledge, and enhance his/her abilities to inquire, move, and play through purposeful

[9] UNESCO ECCE 2007, p6. The basic learning units include: Who am I?; My family; National and religious events; Water; Animals; Transportation; Our country, Homeland; Seasons; Plants; and Occupation.
[10] World Data on Education 2010/11, p 10.
[11] Dr. Tayseer Presentation, MoE, 2010.

activities and to engage Jordanian children and their parents on the awareness of education through an innovative methodology based on entertainment.

- **Parent Awareness Program**: This training program aims to encourage parental involvement in supporting KG teaching and learning.

The MoE's efforts to build KG teachers' competencies and expose them to a range of teaching techniques are evident; however these training programs, organized and carried out by multiple funding partners, swarmed the past few academic years with diverse and varied approaches. There has been a concern at the MoE about over investment in training but with less than expected benefit. As part of that concern, the MoE established a technical committee to carry out the *Kindergarten's Teachers Training Program Mapping* project with an aim to assess how widespread these training programs were and to consider a unified comprehensive training guide to be adopted by the MoE to train KG teachers. This study is a further step to respond to the MoE's concern.

1.2 Previous Relevant Studies

In 2004, NCHRD conducted a study aimed to assess the level of readiness to learn for first grade Jordanian children. The Early Years Evaluation(EYE) instrument was used to assess five developmental domains and the national sample consisted of first grade children distributed across the kingdom. The results revealed that there was a substantial relationship existing between learning readiness and KG enrollment as well as KG type. Children who were enrolled in KG had better learning readiness than children who did not enroll and children who were enrolled in private KGs had better learning readiness than children who were enrolled in public KGs. The study also revealed a significant relationship between learning readiness and socioeconomic status. Children's learning readiness increased with family income, father education, mother education, fewer siblings, and smaller family size. However, no significant relationship was found between gender and learning readiness. The results also revealed that readiness to learn differs according to geographical location (north, middle, south) and residence area (urban, rural). Several recommendations were drawn from the results of this study for future investigations and planning, for example quality of KG teachers.

In 2008, NCHRD conducted a study aimed to evaluate the quality of ECD programs under ERfKE I. The results indicated that overall the quality of the public KGs environment in Jordan revealed average results with 43% of "minimal" quality and 43% of "good" quality on a four point likert scale (inadequate-minimal-good-excellent). These results were significantly better than those found for private KGs. Additionally, when linking findings to teacher training, it was demonstrated clearly that the quality of KG environment improved when KG teachers were trained. The majority of the public KG teachers were trained on one or more of the following ECD training programs: National (Interactive) Curriculum (NC); Working with Young Children (WYC); Kidsmart; or Parental Awareness. These results held true for both rural and urban locations, however the southern regions demonstrated significantly better results in quality than

the northern region. Based on the results, recommendations were drawn to improve the educational and recreational materials made available for children, to reduce the number of students in the classroom, to enlarge the classroom sizes, and to hire more teachers/assistant teachers to ensure individualized instruction and a balanced child-teacher ratio.

In 2010, NCHRD conducted a study using the Early Development Instrument (EDI) developed by Offord Center for Child Studies, with the aim to monitor the ECD at the national level through periodic and repeated measurement of the level of readiness to learn of Jordanian children. The results showed that 73% of children had readiness to learn, however 27% of children revealed vulnerabilities in one or more of the EDI domains. The highest of these was in physical health and communication skills/general knowledge (18.4% children at risk and children with developmental delay) and emotional maturity (11.8% vulnerable). The results also showed a significant gender gap in favor of female children. With regard to readiness to learn when compared to KG enrollment, the results showed that 49.2% of children who were not enrolled in KG did not have readiness to learn, compared with 22.3% of children who had entered KG. Moreover, the results showed lower results in public KGs (27% of children not ready to learn) versus private KGs (only 20.7%). The results also indicated that the level of readiness to learn increases with higher family income, and level of father's and mother's education. Based on the results, the study recommended the expansion of public KGs and encouraged the private sector to establish private KGs beyond urban areas into more remote areas, as well as to enhance parental involvement in their programs. It was also recommended to improve and increase interventions for families with low income, to include remedial plans for children who have special needs, to increase the availability of technology in schools, and to establish a comprehensive training program for KG teachers and supervisors with professional standards and a follow-up system based on a standard set of national indicators for all aspects of EDC programming.

Chapter 2: Study Objectives and Evaluation Questions

2.1 Study Objectives

The current study intends to assess the access, quality, relevance and effectiveness of KG training programs for teachers in addition to teachers' teaching practices in KG schools. Evaluation results should provide critical and useful information on the quality of KG education development in Jordan and further inform MOE policy stakeholders on an expansion of KG education in the country and continuous efforts in KG teacher training. The evaluation objectives for this study are as follows:

1) Provide information that will assist the MOE in revising the existing training programs to improve the quality of KG teachers' practices and support the implementation of a Comprehensive Training Program (CTP);

2) Produce relevant policy recommendations to promote evidence-based, strategic policy development in the KG sector; and

3) Define a set of key indicators pertaining to the current situation of KG teachers' training so as to assist in monitoring the development and implementation of these policies.

2.2 Evaluation Questions

The study objectives have been achieved through answering the following questions:

1) What are teachers', principals', and supervisors' perceptions with regard to training in the following dimensions:

   - **Access and resources**: location, time of training, facilities, availability of process and support;
   - **Quality**: teachers' perceptions of the quality and relevance of contents, organization and applicability of the training.
   - **Relevance**: specific domains of KG education standards covered in the training and teachers competencies;
   - **Effectiveness**: teachers' self-reported level of knowledge and competencies and observed teaching practices in the classroom.

   This is an overall key question that requires analysis of teachers' perceptions of all training programs and how they felt about relevance and usefulness of the training in relation to their classroom teaching practices.

2) How teachers' practices in classrooms differ by various training programs they attended and other characteristics?

   This question requires an analysis of the observed teaching practices by multiple training programs to see if each program offers unique or value-added "benefit" or "value" to KG teachers in classroom practice.

3) To what extent do KG teachers' self-reported competencies of various domains correlate with the observed teaching practices?

   This question requires an analysis of the relational and logical linkage between training and competencies and classroom practice. A hypothesis is clear that more training would result in better competencies and better competencies would further result in better classroom practices.

Chapter 3: Methodology

3.1 Sample and Population

According to the MoE Early Childhood Education (ECE) Department, there were 983 KG female teachers in Jordan in early 2012. Those teachers were allocated to 736 female schools across the country. For the purposes of this evaluation, NCHRD selected a representative random sample of 267 KG teachers spread over 38 educational directorates.

Table – (1) presents the teacher population distribution by region, location, and school type. Most KGs are located within primary and secondary schools, although there are some KGs that have their own schools. As shown in the table below, most KGs teachers are placed in

Table 1: Population of KG Teachers by Region, Location and Type of school (N=983)

	North	Middle	South	Total
Location				
Rural	**232**	**191**	**162**	**585**
Urban	**114**	**162**	**122**	**398**
Type				
Primary	**187**	**184**	**201**	**572**
Secondary	**159**	**165**	**83**	**407**
Kindergarten		**4**		**4**

schools in the northern and central regions. In the northern region, there are more than twice as many teachers in rural schools than urban schools. Further, teachers are placed almost equally in primary and secondary schools. In the middle and south of Jordan, most teachers are in rural areas, but there are a substantial number of teachers in urban areas as well. In addition, it was found that in the middle of the country, there are a large number of teachers distributed among primary and secondary schools, but a few teachers work in exclusively KG schools. In the south, teachers are allocated mostly to primary schools.

Table (2) presents the distribution of *sampled* teachers by the same categories described above. The sample reflects a proportion of teachers in the population by region, location, and school type.

In addition to teachers, we selected a population of KG Supervisors (N=16), who were trained on the KG training programs (National Curriculum, Kidsmart, Wisconsin, SIMSIM, Parental Awareness), to express their views on their current skills to carry out specific tasks related to KG and their opinion about the training they had received to date. A total of 267 Principals, who

Table (2): Sample of KG Teachers for the Study by Region, Location and Type of Schools

	North	Middle	South	Total
Location				
Rural	**60**	**58**	**43**	**161**
Urban	**33**	**43**	**30**	**106**
Type				
Primary	**53**	**53**	**50**	**156**
Secondary	**40**	**47**	**23**	**110**
Kindergarten		**1**		**1**

directly supervised teachers who were part of the study, were also selected to fill out the School Principal's Questionnaire, in order to gather their opinions on the trainings and their observation of KG teacher behaviors in the classroom.

Most sampled KG teachers have attended some type of preparatory training to teach KG classes. As Table (3) demonstrates, the most commonly attended programs among study participants were National Curriculum, Wisconsin, SIMSIM, Parental Awareness, and Kidsmart.

Table 3: Distribution of the Sample: Trainings Received by teachers

	National Curriculum	Kidsmart	Wisconsin	SIMSIM	Parental Awareness	NO KG training
# of teachers	236	142	206	206	157	17
% of the sample	88.4	53.2	77.2	77.2	58.8	6.4

Moreover, it is clear by the overall percentages above that most teachers had participated in multiple trainings. Table 4 demonstrates that approximately one-third of the KG teachers

Table 4: Sample Distribution by number of trainings undertaken by teachers

Kinds of Training	Number of Teachers	Percentage of Teachers
0	17	6.4
1	17	6.4
2	22	8.2
3	47	17.6
4	75	28.1
5	89	33.3

attended all five of the training programs. Approximately 28% attended four training programs, 17.6% attended three training programs, and only a small percentage attended one or two programs (6.4% and 8.2%, respectively). An even smaller percentage (6.4) had not attended any training.

3.2 Measures

Four measures were developed by NCHRD in collaboration with the MEP team: 1) School Principal Interview; 2) KG Classroom Observation Tool; 3) KG Teachers' Perception of Training Programs; 4) KG Supervisors Perception of Training Programs. The process to develop these measures was interactive and consisted of several steps: 1) Reviews of the ERfKE II program, the National Strategy for Early Childhood, KG teachers competences document, mapping of KG training programs (National Curriculum, Kidsmart, Wisconsin, SIMSIM, Parental Awareness), and KG supervision tools; 2) Consultation with key KG specialists at the MoE during the review process; and 3) Consultation with ERSP staff. The process was guided by evaluation questions. Only items that were directly related to the overall study objective were included in the measures. The main characteristics of each measure are presented below.

3.2.1 School's Principal Interview

The School Principal Interview was developed to measure KG principals' needs and perceptions with regard to KG training programs and to assess principals' perceptions with regards to KG teacher's practices. The tool consisted of 38 items distributed into the following sections (domains):

- **Part I: General Information** provides school information and principals' characteristics.
- **Part II: KG Teacher's Planning Behaviors** provides information on teachers' capacity to plan classroom activities. This section comprises 4 items.
- **Part III: KG Teacher's Classroom Practices** provides information about teachers' expected practices during a regular day in KG classrooms. All items represent recommended daily practices by the MoE. This section comprises 14 items. In Parts II and III, answer choices were recorded in a Likert scale, which includes the following choices: Always (4), Sometimes (3), Rarely (2), Never (1).
- **Part IV: Principal's Training on KG Programs** represents principals' perceptions about KG training they have received, whenever applicable. This section comprises 20 items. Answer choices were recorded in a Likert scale, which includes the following choices: Very Satisfied (4), Satisfied (3), Somewhat Dissatisfied (2), and Very Dissatisfied (1).

3.2.2 KG Classroom Observation Tool

The main objective of this measure was to record teaching and learning practices in KG classes through a one day observation. The measure includes the following parts:

- **Part I: General Information** present KG teachers' educational background characteristics and previous attendance to KG training programs provided by MOE (National Curriculum, Kidsmart, Wisconsin, Parental Awareness).
- **Part II: KG Teacher's Planning of Classes and Assessment of Students** assess teacher's general behaviors regarding planning and supervision/assessment of children in their classroom. The section comprises nine items presented in a "Yes/ No" format. Observers were instructed to fill it out that section before the Classroom Practices observation by examining existing documentation completed by the teacher.
- **Part III: Classroom Practices** assesses observed teacher's and children's behaviors during a regular class day, for the whole day. This section comprises 33 items. Answer choices were recorded in a Likert scale, which includes the following choices: Outstanding (4), Satisfactory (3), Needs Improvement (2), Failed to carry out activity (1).

3.2.3 KG Teachers/ Supervisors Perception of Training Programs

KG teachers and supervisors have been the main target groups for KG training programs during ERfKE I and II. Therefore, the goal of the questionnaires targeting teachers and supervisors was to draw information about their perceptions, expectations and needs with regards to training programs, such as location, timing, resources, quality of contents, and trainers' skills and knowledge. In addition, KG teachers' and supervisors' questionnaires were developed to capture possible variations in KG training programs in terms of content. This measure includes the following parts:

- **Part I: General Information** includes school information, KG teacher's educational background, exposure to KG training programs provided by MOE (National Curriculum, Kidsmart, Wisconsin, Parental Awareness).
- **Part II: Teacher's Training Needs** assesses teachers' self-reported needs to receive further training on specific areas such as children's development and classroom management process. This section comprises 15 items. Answer choices were recorded in a Likert Scale, which includes the following options: High (3), Moderate (2), No Need (1).
- **Part III: Teachers' Perception about KG Training Programs Received** assesses teacher's self-reported confidence to carry out the tasks she learned during the training program(s) received (National Curriculum, Kidsmart, Wisconsin, SIMSIM, Parental Awareness). Teachers were instructed to provide information only on the trainings they had received by the time of the interview. For each training received, teachers were asked to provide information on the following:
    - Level of confidence with regard to knowledge and ability to carry out specific tasks based on what was taught during each training program attended. The number of items for each training program ranged from 18 (Kids Smart) to 44 (National Curriculum) and it reflected the number of themes covered by each training program. Answer choices were recorded in a Likert scale, which

included the following options: Very confident (4), Somewhat confident (3), Little Confident (2), Not confident (1). The programs were mapped under six main domains (general knowledge, specific knowledge, planning, implementation, evaluation and professional development).

- Satisfaction with each training program, with regards to location, timing, resources, contents and trainers' skills. This section comprised 12 items. Answer choices were recorded in a Likert scale, which includes the following options: Very satisfied (4), Satisfied (3), Somewhat dissatisfied (2), and very dissatisfied (1).

3.2.4 Validity and Reliability of the Instruments

Although this is not an impact evaluation study with a counterfactual design, every effort was made to ensure both validity and reliability of all the instruments developed for the purpose of the KG study. On validity, a significant effort was made at the design phase to improve the overall validity by taking into consideration the real policy "wants and needs" of the MoE in terms of area of relevance and importance to the key stakeholders. In addition, domains and sub-domains were developed based a wide consultation with experts in KG education, KG curriculum standards, and KG teacher training contents to ensure content and construct validity. Furthermore, after the data was collected, the Principal Component Analysis was used to confirm the statistical groupings of all the sub-domains. The measures were proven sound and valid with just a few items removed.

On reliability, a multiple questions items were designed for each identified sub-domain. The questions were intentionally designed with perceived positive correlations among them but potentially increased net measure contribution of each to the overall measurement of each domain or sub-domain. These items were tested first and confirmed before the actual use. In addition, all questions are close-ended with a standard four-point scale as response. As mentioned earlier, all data collectors were carefully trained to ensure reliability and consistency of data collection among all data collectors, particularly for classroom observation. Before any domain composite was developed, we conducted a classical reliability test to check item-to-item, split-half, and item-to-total relationships among all the potential items for that composite. Statistical reliability indicator, alpha, must be significant and high enough for a composite building (above 0.65).

3.3 Data Collection

A total of 54 supervisors were selected to collect data from all study respondents. Experience in KG and/or the first three grades were the main criteria to be part of the data collection team. The general procedure for selection of data collectors were as follows:

- Supervisors were nominated by the MOE in response to NCHRD's request for data collectors. Given the small number of KG supervisors available (total 16, who also

participated in the KG Supervisors Perception of Training Programs questionnaire), the remaining 38 Supervisors were nominated from Grades 1-3.

- The 54 supervisors were divided into two groups who attended four hours training each. Training was conducted in collaboration with NCHRD staff and the Directorate of ECD in MOE. NCHRD focused on the overview of instruments and the procedures for data collection. The Directorate of ECD focused the training on the in-depth characteristics of KG classrooms and environments.
- An implementation schedule was given to each supervisor based on the sample distribution. Supervisors were asked to call the school in advance to coordinate the visits. Data collection spanned from May 11-22, 2012. Data collection for each school lasted one day.
- After data collection was complete, each set of instruments was reviewed to ensure accuracy and consistency.
- The codebook was prepared.
- The data was entered and cleaned before starting the analysis.

3.4 Limitations

This study is a post-training snapshot of how KG teachers performed in classes and their opinions of training programs in retrospect as well as supervisors and principals perceptions of KG training and education. It is not a counterfactual based impact evaluation of KG training programs on the desired outcomes.

KG teachers were observed in class only once. It was not possible to observe each teacher more than once given the limited time and resources. Bearing in mind that conducting more observations for each teacher would have had a greater confidence in the reliability of observation data collected.

Secondly, the study was not able to assess teachers' knowledge and behavior before any training was conducted. More importantly, most teachers attended multiple trainings as part of their professional development. Therefore, it is not possible to isolate the impact of training on teachers' outcomes.

Finally, data was collected at the end of the academic year. During that period, many of teachers' behaviors might have not been part of their regular routine throughout the year.

Although we realize that there is a limitation in claiming any causality linkage, we remain confident that the evidence presented in this research study is valid and reliable and policy implications as we outlined at the end of the report should be considered by policy makers.

Chapter 4: Findings

4.1 KG Teachers in Jordan

4.1.1 General Profile of Sampled KG Teachers

There are total 983 public KG teachers in Jordan. All are female. For this study, 267 teachers were randomly sampled across 38 field directorates and 249 schools. Given a large sample size and its randomization, it was strongly believed that the sample is representative of the KG teacher population in Jordan. Therefore, the sample profile described below is the KG teacher population profile in the country. To describe KG teacher profile, it was focused on teachers' level of education, years of experience, employment status and training attended for the past few years. Table (5) below shows the variation of the KG teacher profile.

Table (5) The variation of the KG teachers' profile

Teacher Characteristics		No. of Teachers in the sample	%
Earned Academic Degree	Diploma	37	13.9
	Bachelor	226	84.6
	Master	4	1.5
	Ph.D.	0	0
Earned Education Degree[12]	Diploma	20	7.5
	Master	5	1.9
	Ph.D.	0	0
	No education degree	242	90.6
Employment status	Permanent	243	91.0
	Non-Permanent	24	9.0
Years of Experience in KG	Less than 5 years	132	51.0
	5-10 years	115	44.4
	More than 10 years	12	4.6
Training program	National Curriculum	236	88.4
	Wilkinson	206	77.2
	Kids-Smart	142	53.2
	SIMSIM	206	77.2
	Parental Awareness	157	58.5
	Others	92	34.5

[12] There is no education bachelor decree level (?).

By academic qualification, we find that 1.9% of KG teachers in Jordan have Master's degree, 84.6% bachelor's degree, which takes up a great majority, and 13.9 two-year education diploma beyond high school graduation (below a bachelor's degree). None of the KG teachers are PhD holders. By education specific qualification, 9.4% of all teachers were trained (pre-service) in an education faculty or institutions (with educational diploma or bachelor degree). As for their employment status and years of KG experience, it was found that 91% of all KG teachers in Jordan hold a permanent post and 9% hold a temporary or contract post. 51% are relatively new or young as teachers in KG, having less than 5 years of teaching experience in KG level. Almost 45% have more than 5 but up to 10 years of KG teaching experience. And less than 5% have taught KG children for more than 10 years. In general, this indicates that KG education is relatively young force but have relatively extensive KG experience.

Teachers were also asked to report on their KG relevant training. Data shows that most of them have attended somewhat extensive trainings in the past few years. For example, 88.4% of KG teachers attended National Curriculum (NC) training program. 77.2% of KG teachers attended SIMSIM training (SS), and 77.2% (exactly the same percentage) in Wisconsin training program (Wisc). 53.2% of them attended KidsSmart (KS) and 58.5% of the teachers attended Parent Involvement (PI) training program. In addition, some KG teachers (34.5%) attended many other KG relevant training programs such as development of physical environment, ISO system-Quality Assurance, Child Abuse, Think first, etc. as Table (5) above shows.

4.1.2 Class or Classroom Profile

For classroom, the following features (listed in table (6) were identified to inform us of the basic class characteristics or classroom condition, special needs children, computers and

Table (6) The basic classroom characteristics or condition

Teacher Characteristics		**No. of Teachers in the sample**	**%**
Are there Kids with SEN in the class	Yes	84	31.8
	No	180	68.2
Types of SEN	Gifted	53	63.1
	disabilities	26	31.0
	gifted & disabilities	5	6.0
Is there is computer in the class	Yes	206	77.4
	No	60	22.5
Is there is internet connection in the class	Yes	12	4.5
	No	254	95.5

internet availability in classroom. We found that among all KG classes, 31.8% report that they have children with special needs. Most of the children with special needs, 63%, are regarded as gifted children. Children with disabilities among all special needs children are of 37%[13].

On computer and internet, the study finds that a great majority of classrooms, 77.4%, have computers and 22.5% have no computers. However, in terms of internet connection, only 4.5% of those classrooms have internet connection. Therefore, 95.5% of all KG teachers would not be able to use internet resources in their teaching of KG children because of the lack of direct access.

4.2 Class Observation

As described in the methodology section, the 269 sampled KG teachers were observed. The observation process was that 2 well-trained observers spent a whole day with each KG teacher in her classroom to observe how various teaching and learning activities were carried out. The observers held on the observation checklist and would complete all items at the end of the observation. Based on the national KG curriculum and training topics of the training programs in Jordan, 33 observation items of classroom teaching practices were closely observed and checked in an observation instrument by the observers. The 33-item instrument contains multiple sub-domains of 1) KG teachers' classroom practices [18 items]; 2) KG teachers' social interaction with kids [5 items]; 3) use of education corners in classroom [3 items], and a few others.[14] This report will examine each one below in a greater detail.

4.2.1 KG Teachers' Classroom Practices

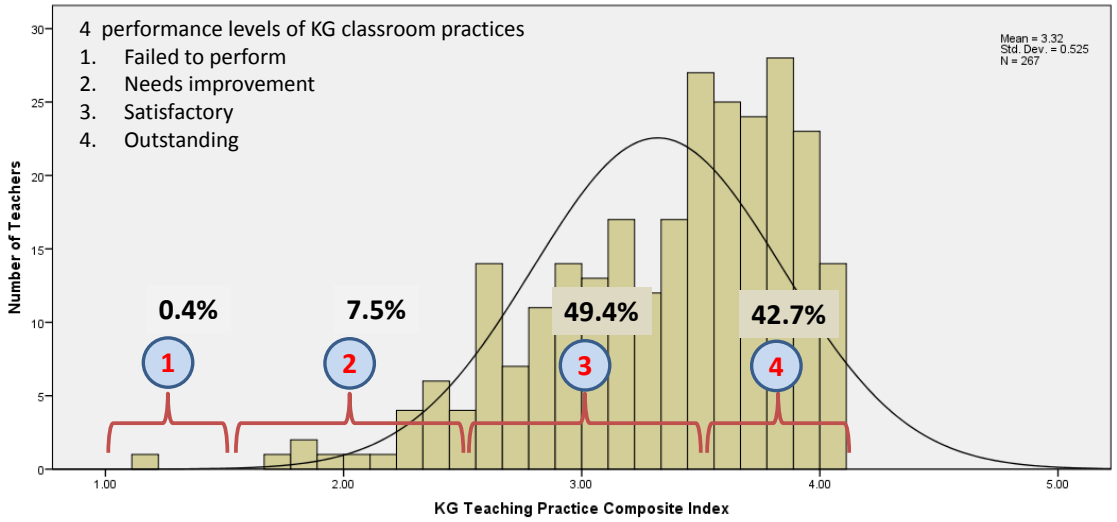
It is undoubtedly that teaching practice is the most critical factor to affect kids' learning in classes. How they teach and interact with young children would make an important difference. The research team for this study selected 18 items, by design and statistically confirmed through a factor analysis, for measuring the sub-domain of a "KG teaching practices index". Specific items are listed in Appendix 1. Original scale of 1 through 4 is kept for an easier interpretation of the composite index. 1 is the poorest index score, also means "failed to perform" and 4 is the best score indicating teachers' outstanding performance in class. Chart 1 below shows average performance levels of all KG teachers' teaching practices index. The study finds that 92.1% of all KG teachers performed either satisfactorily or outstandingly in their own classes, with 49.4% at satisfactory level ranging from 2.51 to 3.50 on the index, and 42.7% at

[13] Number of special needs students is directly reported by teachers who were observed. It is not known how some of the students were classified into various categories of special needs.

[14] By design, three sub-domains were pre-conceived as "planning", "implementation" and "student assessment" according to the training programs many KG teachers participated in. But the original names of the pre-conceived sub-domains, "planning, implementation, and student assessment" were not good representation of each specific set of practices observed in the classroom. As a result of factor analysis which confirmed most of the pre-conceived items' alignment with each original sub-domain, we decided to use more appropriate names for a better clarity.

outstanding level ranging from 3.51 to 4. There are only 7.9% of the KG teachers who were considered poor performance or need to improve in classroom practices.

CHART (1): Average performance levels of all KG teachers' teaching practices index.



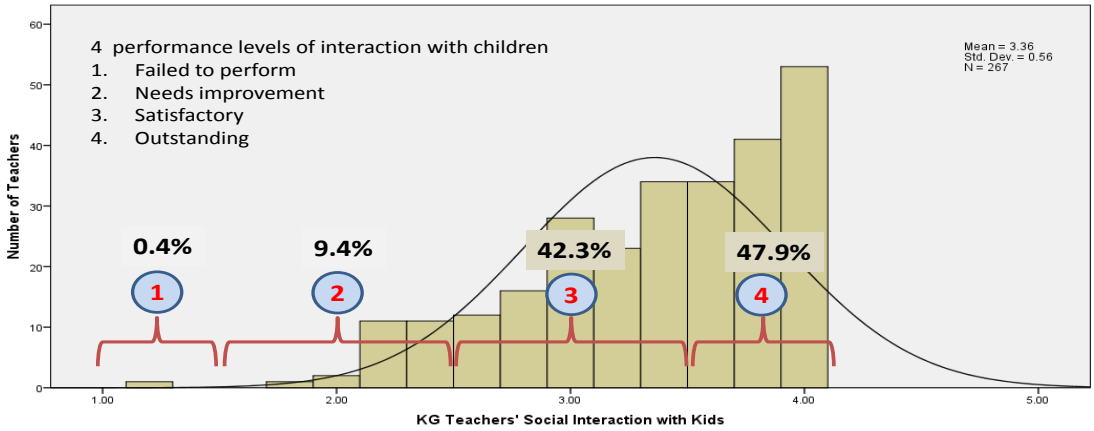
The study result implies that the great majority of KG teachers in Jordan performed quite well by the measures developed based on the national curriculum standards and training topics. In other words, most KG teachers followed and met the national standards and used the methodologies or practices promoted and trained in the training programs. This also means that teachers with the high scores of classroom practices are more likely to use multiple tools to teach children new knowledge and skills; to provide feedback to children about the level of achievement in their learning tasks; to use real-life experiences to facilitate children's learning; etc. These are just 3 examples of the 18 "teaching practices items" observed.

4.2.2 KG Teachers' Interaction with Children

There are five specific items used to measure teachers' interactions with children in classrooms. These are: 1) small groups work; 2) reading to children; 3) asking children to read or examine pictures; 4) respectful interaction with each other; and 5) teacher addresses each child by name[15]. Chart (2) below shows that a great majority (90.2%) of KG teachers in Jordan performed satisfactorily or outstandingly in interacting with students, 42.3% and 47.9% respectively. Only 9.8% of KG teachers should improve the skill in this aspect.

[15] The result from a factor analysis evidently shows that these five items together should be classified as a separate factor from the composite index of the teaching practices in classroom.

CHART (2): KG Teachers' Social Interaction With Kids

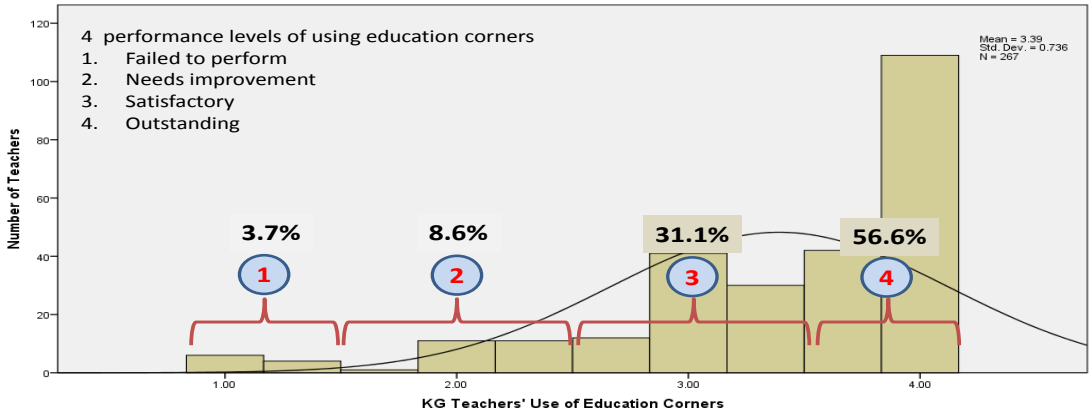


Although the composite of teachers' interaction with children in classrooms is a separate composite, it also suggests that KG teachers in Jordan have been following a good practice of interacting with children in classrooms. They performed overwhelmingly well in this regard.

4.2.3 Education Corners

In KG classes in Jordan, there has been a promotion of developing "Education Corners" (EC) in classrooms. All classrooms have education corners arranged. For this study, each KG teacher was observed in terms of using EC for teaching purpose, for example, 1) if she organized EC in the classroom and appropriately according to the class size and environment; 2) if she clearly stated and/or posted rules to children for using EC; 3) if the education corners were filled with toys and educational tool kits. Chart (3) below shows an aggregate composite of teachers' use of educational corners. Like the previous two composites, a large majority of KG teachers in Jordan utilizes EC satisfactorily or outstandingly in classrooms.

CHART (3): An aggregate composite of teachers' use of educational corners.



87.7% of KG teachers had children use education corners in classrooms during the observation either in a satisfactory (31.1%) or outstanding (56.6%) way. 12.3% of KG teachers either did not use EC or used EC poorly and needing improvement.

In sum, as all three charts above show, a great majority of KG teachers in Jordan performed very well in classes measured in teaching practices, interaction with children and use of education corners. Overall less than 10% of teachers with an exception of teachers on education corners (which is 12.3%) need to be additionally supported to improve the teaching performance in classes in these aspects. For details, average scores of each of the 33 observed practices were listed and rank ordered in the table (7).

The detailed results show that the first rank ordered 8 practices are considered "outstanding" with score above 3.5 and all the other 25 practices considered "satisfactory". With rank order list, one may find it useful to see which practices are most commonly practiced or best practiced in KG classes in Jordan, and which ones are the least.

Table (7) Average scores of each of the 33 observed practices (rank ordered)

Average Scores (1-4) of Each of the 33 Observed Practices in Class				
	N	Mean	S.D.	Rank[16]
Teacher records presence or absence of children (ITEM 2)	266	3.77	.523	1
Kids have their interactive activity books (ITEM 4)	262	3.74	.655	2
Teacher has the national guideline for the interactive curriculum (ITEM 3)	260	3.71	.729	3
Teacher walks around to observe children's work and offers support (ITEM 27)	267	3.66	.567	4
Teacher addresses children by name (ITEM 21)	267	3.66	.575	5
Teacher is attentive to the safety of children (ITEM 9)[17]	267	3.55	.626	6
Teacher encourages respectful interactions among children (ITEM 17)	267	3.53	.602	7
Teacher uses teaching tools in a manner that is safe to children (ITEM 22)	263	3.51	.641	8
Teacher uses several tools to teach children new skills and concepts (ITEM 24)[18]	266	3.49	.685	9
Teacher introduces kindergarten math, alphabet, science, etc.) (ITEM 26)	266	3.49	.640	10
Teacher organized toys and educational tools in its appropriate places (ITEM 8)	262	3.47	.771	11
Teachers utilizes tangible materials to reinforce active learning (ITEM 13)[19]	267	3.47	.700	12

[16] Rank by mean score.
[17] This includes how children handle school materials, such as scissors, pens, keeps them away from windows, sharp materials, etc.
[18] These tools include blocks, dough, crayon, puzzle, pictures, tapes, etc.
[19] Learning that depends on child's active involvement with teacher and spontaneous learning

Teacher communicates rules and instructions to children clearly (ITEM 23)	267	3.44	.654	13
Teacher asks children to work in small groups (ITEM 14)	266	3.44	.688	14
Teacher organizes educational corners accordingly (ITEM 6)[20]	267	3.42	.816	15
Teacher tries to keep kids busy with learning activities (ITEM 5)	265	3.39	.618	16
Teacher allocates time well and accomplished all planned tasks (ITEM 28)	267	3.37	.672	17
Teacher clarifies the corners rules for kids (ITEM 7)	266	3.36	.795	18
Teacher encourages children to experiment using her senses (ITEM 25)	267	3.35	.717	19
Teacher transitions between different activities smoothly (ITEM 19)	265	3.34	.717	20
Teacher participates in children's breakfast (ITEM 18)	263	3.32	.804	21
Teacher offers multiple recess time for free play (ITEM 11)	267	3.32	.677	22
Teacher links learning activities with children's outdoor experiences (ITEM 10)	266	3.29	.799	23
Teacher discusses with children the tasks they executed (ITEM 33)	266	3.28	.796	24
Teacher reads (books, stories) to children (ITEM 15)	263	3.24	.860	25
Teacher provides kids with feedback on level of achievement in the tasks (ITEM 32)	267	3.21	.760	26
Teacher lets child learn by him/herself through experiences (ITEM 12)	264	3.20	.697	27
Teacher uses more than one assessment tools in class (ITEM 31)[21]	267	3.19	.827	28
Teacher teaches with attention to individual differences in class (ITEM 29)	267	3.16	.697	29
Teacher gives books to children (to read or see pictures) (ITEM 16)	267	3.00	.878	30
Teacher let children assess each other's work (ITEM 30)	266	2.77	.852	31
Teacher uses computer in her teaching in class (ITEM 20)	257	2.63	1.183	32
Teacher carries out differentiated activities for children with special needs (ITEM 1)	207	2.51	.960	33
Valid N (listwise)	173			

Earlier 3 subdomains were described; classroom teaching practices (18 Items), interaction with children (5 items) and use of education corners (3 items). There are 7 observed practices that were not loaded to the subdomains as factor analysis indicates that these 7 items are independent from other items or domains. For convenience, these Items were listed in table (8) below for reference.

[20] By the guideline
[21] Such as checklist, rubric, or worksheet, etc.

Table (8) Independent items that were not loaded to the subdomains

Excluded Items from 3 Subdomain Composites	N	Mean	S.D.
Teacher records presence or absence of children (ITEM 2)	266	3.77	.523
Teacher is attentive to the safety of children (ITEM 9)	267	3.55	.626
Teacher participates in children's breakfast (ITEM 18)	263	3.32	.804
Teacher uses computer in her teaching in class (ITEM 20)	257	2.63	1.183
Teacher carries out differentiated activities for children with special needs (ITEM 1)	207	2.51	.960
Teacher has the national guideline for the interactive curriculum (ITEM 3)	260	3.71	.729
Kids have their interactive activity books (ITEM 4)	262	3.74	.655

4.3 Factors Related to Teaching Practices

Results from classroom observation show that KG teaching practices are "satisfactory or outstanding" in general. Is this good performance associated with training programs teachers have attended in the past few years? Are all the training programs equally effective in translating into good practice? How about accumulated effects of multiple training programs if teachers attended several training programs? To answer these questions, the factors of teachers' participation in various training programs were examined and have been reported on the analysis and results.

4.3.1 Training with Teaching Practices

Again, as reported in the general profile, KG teachers selectively participated in five different but major training programs. Some participated in all five programs and others may have participated in none. Still others variably participated in a few, two, three or four training programs. The table (9) below shows number of teachers participated in each of the five training programs.

Table (9) number of teachers participated in each of the five training programs.

Programs	Participation in training programs, No. and %	Non-participation in training programs, No. and %	Total No. of Teachers in the Sample
National Curriculum (NC)	226 (88.4%)	31 (11.6%)	267
Wisconsin (Wisc)	206 (77.2%)	61 (22.8%)	267
Kidsmart (KM)	142 (53.2%)	145 (46.8%)	267
SimSim (SS)	206 (77.2%)	61 (22.8%)	267
Parent Involvement (PI)	157 (58.8%)	110 (41.2%)	267

It is evident from the table above that the most attended training program is National Curriculum. 88.4% of all sampled KG teachers attended the training program. Wisconsin and SimSim programs were also well participated by the KG teachers in Jordan. 77.2% of all teachers

attended them[22]. More than half of all teachers participated in Kidsmart training program (53.2% and in parental awareness training program (58.8%). Overall, KG teachers in Jordan have participated in KG relevant education training and many teachers participated in multiple training programs up to all five of them. In fact, a great majority of KG teachers (161 teachers) participated in 4 or 5 of the above training programs and only 17 KG teachers in the sample participated in none of the above training programs (See table 9). It can be concluded that KG teachers have been well trained in terms of number of teachers who received KG training and number of training programs they attended.

Critical questions were asked: 1) Does teacher participation in the training programs have any positive effects on teachers' practices in KG classes? 2) Does participation in more training programs have accumulated or value-added positive effect on teachers' practices in KG classes? 3) Which program has the largest positive effect (if any) on teaching practices in classes? 4) Will the above effects (if any) hold significant if teachers' characteristics are controlled for. To answer these questions, analysis was started first by cross-examining each program teachers attended with teachers' good teaching practices index, and then number of training programs participated with the same index.

Table (10) below shows that all programs individually except for Parent Awareness have significant effects on teachers' practices in KG classes. For example, if teacher participated in NC training program, she would on average have 0.32 points higher on the good "teaching practice index" than those who did not participate in the program. The magnitude of the difference is slightly more than 10%. This implicates that teachers who participated in NC on average performed better by 10% in observed teaching practices than those teachers who did not participate in NC training program.

Table (10) Programs effects on teachers' practices in KG classes

Participation or Not in Following Programs:	Means for "Yes"	Means for "No"	Mean Difference	P-value
National Curriculum (NC)	3.36	3.04	0.32	0.002
Wisconsin (Wisc)	3,37	3.16	0.21	0.006
Kidsmart (KM)	3.41	3.21	0.20	0.002
SimSim (SS)	3.36	3.20	0.16	0.038
Parental Awareness)	3.36	3.26	0.10	0.114
Not participated in any	2.81	n/a	n/a	n/a

In addition, those teachers who participated in Wisc. training program performed 0.21 (6.7% in magnitude) better in teaching practice than those who did not participate in Wisc. training

[22] We must note that although the percentage of participation in both programs is the same, they are not necessarily the same teachers.

program. For Kidsmart and SimSim training programs, the positive differences in teaching practices between participation and non-participation are 0.20 (6.2% in magnitude) and 0.16 (5.0% in magnitude) respectively.

As it is known by now, most of KG teachers participated in multiple training programs. One may wonder if there is any incremental positive effects on teaching practices in KG classes after teachers attended more training programs. ANOVA test was employed to identify significant mean differences by number of training programs KG teachers participated in[23]. Table (11) below shows that the only significant difference in KG teaching practice index is found between *non-program participants* and *one program participants*. No other paired tests show any statistically significant difference in average score of the index. Furthermore, paired differences were tested among all training programs attended by teachers, it was found no incremental (or value-added) effect of any additional training program attended over the previous training on improving teaching practices in classes. The differences observed in the table are "small natural variation" due to the sampling errors. This indicates that any additional training program attended beyond the first training does not offer any value-added "incremental effects" to the realized teaching practices observed in KG classes.

Table (11) ANOVA test to identify significant mean differences by number of training programs KG teachers participated in

No. of Programs Participated by KG Teachers	No. of Teachers in Participation	**Mean** Score of KG Teaching Practice Index by No. of Training Programs Attended	Incremental differences by No. of training programs attended	**S.D.**
0. Non-participation	17 (6.4%)	2.81		0.71
1. One program	17 (6.4%)	3.36	0.55*	0.37
2. Two programs	22 (8.3%)	3.28	-0.08	0.46
3. Three programs	47 (17.6%)	3.25	-0.03	0.48
4. Four programs	75 (28.1%)	3.36	0.11	0.53
5. Five programs	86 (32.2%)	3.42	0.06	0.49
Total Number of Teachers	267			

* Statistically significant level (P-value <0.01)

[23] We used ANOVA with Post Hoc Tukey tests to test significance levels of all pairwise multiple comparisons to identify if there is any value-added effect on teaching practices when more training programs are attended. The only significant difference is found between non-program participants and one program participants. No other paired tests show any statistically significant difference. Therefore the differences observed in the table are "natural variation" due to the sampling errors. This indicates that any additional training program attended beyond the first training does not offer any value-added "incremental effects" to the realized teaching practices observed in KG classes

4.3.2 Good Teaching Practice Index by Job Status, Years of Experiences, and Educational Qualifications

To examine the good teaching practice index by teacher characteristics, the mean differences in the composites of Good KG Teaching Practices index Social Interaction, and Educational Corners were examined between permanent teachers and non–permanents, among teachers with experiences less than 5 years ,teachers with (5-10) years, and teachers with more than 10 years, and among teachers' qualification levels. Comparing permanent and non-permanent teachers, the results, as presented in table(12), showed that permanent

Table (12) The mean differences of the good teaching practice index by teacher characteristics(Good KG Teaching Practices index Social Interaction, and Educational Corners)

	Teacher status			
		Mean	SD	P-value
Good KG Practice's index	Permanent	3.36	.491	.000
	Non-Permanent	2.96	.673	
Social interaction	Permanent	3.39	.538	.034
	Non-Permanent	3.13	.692	
Educational corners	Permanent	3.42	.725	.211
	Non-Permanent	3.22	.733	

teachers on average have significantly higher composite scores in good KG practices index and social interaction than non-permanent teachers. Whereas, the results revealed that no statistical significant difference between the two groups at Educational corners factor. The average score for permanent teachers at the good KG-teachers index is 2.36 while the average score for non-permanent teachers is 1.96, approximately 21% point difference in the this composite score in favor of permanent teachers. In addition, the average score for permanent teachers at social interaction is 2.39 while the average score for non-permanents teachers is 2.13, almost 11% point difference in this composite score in favor of permanent teachers. When the practice index score among teachers with various years of KG experience were examined, no significant differences were found among them in teaching practices, interaction with children and use of education corners, which indicate that teachers with varying years of experiences perform the same in KG classes in all observed practices. The same insignificant finding was found among various qualification levels. Diploma holders did not perform worse than teachers with bachelor or master's degree. Bachelor degree holders did not perform worse than teachers with master's degree. In addition, there is no significant difference between teachers with academic qualification and teachers with education qualification. In short, it can be concluded that KG teachers perform similarly in all observed classroom practices regardless varying years of KG experience and their pre-service academic or educational qualification levels.

To examine the teaching practice index by school characteristics the 3 composite mean differences by locality and education levels were examined. As shown on table (13), it was found that there is no difference in any of the 3 subdomains, teaching practices, interaction with children, or use of education corners, between urban and rural teachers (no statistical significance). The same has been found by levels that there has been no significant difference in any of the 3 subdomains among primary, secondary and kindergarten schools. However, when examined the practice index score among schools by region, namely south, north and central, it was found that teachers in south have significantly higher composite scores in all 3 measured subdomains of class practices than teachers in central and north.[24]

Table(13) The mean differences of the good teaching practice index by school characteristics (locality and education levels)

	Location	**Mean**	**SD**	**P-value**
Good KG Practice's index	Urban	2.34	.57	.735
	Rural	2.31	.49	
Social interaction	Urban	2.38	.61	.608
	Rural	2.35	.52	
Educational corners	Urban	2.32	.82	.135
	Rural	2.45	.66	

	School Type	**Mean**	**SD**	**P-value**
Good KG Practice's index	Primary	2.33	.53	.572
	Secondary	2.31	.51	
	Kindergarten	2.83	-	
Social interaction	Primary	2.36	.56	.733
	Secondary	2.36	.55	
	Kindergarten	2.80	-	
Educational corners	Primary	2.35	.74	.353
	Secondary	2.47	.71	
	Kindergarten	2.67	-	

[24] We used ANOVA with Post Hoc Tukey tests to test significance levels of all pairwise multiple comparisons according to Region, The significant differences at the good KG-teachers index are found between south & north located schools and between south & Middle located schools, same differences are found at the Social interaction index, whereas the significant differences at the Educational corners index are found between south & north located schools only.

	School Region	Mean	SD	P-value
Good KG Practice's index	South	2.52	.40	*.000
	North	2.26	.57	
	Middle	2.23	.52	
Social interaction	South	2.56	.47	*.001
	North	2.26	.61	
	Middle	2.31	.54	
Educational corners	South	2.58	.59	*.033
	North	2.29	.85	
	Middle	2.37	.68	

* Statistically significant level (P-value <0.05)

4.4 Teacher Perceptions

As reported earlier, an overwhelming level of training attendance by KG teachers in Jordan and training effect on teaching performance in classroom. Thus, and in order to validate the relationship between training and teaching practice, teachers' perceptions of training programs were examined to understand how satisfied they are with various training programs and how competent they feel about their learned competencies through the training.

4.4.1 Teachers' Perceptions about Training

There are two major sub-domains KG teachers expressed their opinions about through 12 questions. One sub-domain is about training venue, condition, and resources, and the other sub-domain is about the quality of the training including relevance, preparation and organization. These two sub-domains were discussed separately.

Four specific questions were raised to measure teachers' perception of training venue, condition and resources including timing, place and accommodation. Specifically, these are 1) training equipment, tools, and materials, 2) accommodations and training facilities, 3) timing and length of time, and 4) location and transportation. An average composite score ranging from 0 to 3 was developed to tell overall training condition and resources. Point 3 means a level of strongest satisfaction with the training venue, condition and resources while point 0 means no satisfaction at all. Table (14) below (the first two columns) shows that SimSim training program has the best

Table (14) Teachers' satisfaction with the training venue, condition and resources

Program	Condition & Resources		Quality	
	Mean	SD	Mean	SD
National Curriculum	2.05	.82	2.50	.61
Wisconsin	1.78	.87	2.40	.65
Kidsmart	2.15	.78	2.49	.69
SimSim	2.34	.73	2.60	.53
Parental Awareness	2.21	.79	2.45	.70

training facilities, condition and resources among all five training programs. The worst is Wisconsin training program. Other three training programs are placed in the middle. To evaluate the quality of training programs, teachers answered 8 questions about their satisfaction with the training programs. These questions are about trainers' preparation for the training, relevance to the needs of the teachers, value of practical application in classes, etc. The same scale of 0 to 3 was developed. 3 means a level of strong satisfaction while 0 means no satisfaction at all (strongly unsatisfied). Teachers generally are quite satisfied with the training programs they participated. The composite score of satisfaction with the training ranges from 2.40 to 2.60, an overall high level. This again confirms that each training program regardless which one offers a good value of learning by teachers' opinion. If teacher participates in any of the offered training, she would learn and may be likely to transfer the learned skills to classroom. However, SimSim training programs ranks the highest and Wisconsin ranks the lowest in an aggregate teacher satisfaction level. Between SimSim and Wisconsin programs, the ranked difference in teachers' perception of the training quality is about 9%, which is statistically significant.

Analyzing details on specific question items, in order to show average teachers perception scores on all specific questions items (as presented on table 15). Low average score, particularly below 2.5 means "not satisfactory" and high average score above 3.5 would mean very satisfactory. For example, KG teachers' perception about timing and place for training has lowest scores, that is, teachers are not all positive about timing and location of trainings. Reasons for this could be further investigated. On the other hand, the highest overall means (all the training programs) are with items "contents matching needs", "theoretical concepts learning", and "sharing practical experience". Overall, teachers' perceptions of training are positive.

Table (15) Teachers' satisfaction with the training programs (trainers' preparation, relevance to the needs of the teachers, value of practical application in classes)

	Wisconsin		NC		KidSmart		Parental Awareness		SIMSIM	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Training venue had all equipment and tools necessary to conduct training (printers, didactic materials, etc.).	3.11	0.91	3.30	0.79	3.46	0.79	3.26	0.79	3.53	0.70
Training venue was adequate (lighting, size, accommodations).	2.99	1.05	3.19	0.89	3.36	0.83	3.36	0.82	3.45	0.75
Training was offered at a convenient time.	2.39	1.12	2.76	1.12	2.79	1.13	3.10	1.01	3.19	1.01
Training was conducted at a convenient location.	2.63	1.12	2.95	1.02	2.97	1.07	3.14	1.00	3.20	1.00
Training contents matched your needs.	3.41	0.76	3.48	0.70	3.39	0.81	3.39	0.80	3.57	0.65
Training taught theoretical concepts relevant to early childhood education	3.46	0.67	3.50	0.70	3.51	0.72	3.47	0.76	3.56	0.65
Training provided good practical information and suggestions to be implemented in the classroom	3.40	0.76	3.53	0.66	3.49	0.78	3.45	0.75	3.60	0.62
The facilitator was well prepared to carry out training	3.41	0.79	3.51	0.69	3.51	0.79	3.48	0.75	3.62	0.66
Training started with the facilitator explaining a set of training objectives	3.44	0.78	3.52	0.69	3.52	0.75	3.47	0.72	3.63	0.55
Trainer assessed participants' knowledge and skills	3.38	0.75	3.50	0.68	3.49	0.75	3.45	0.75	3.60	0.57

The facilitator encouraged participants to share their practical experiences	3.41	0.79	3.52	0.69	3.57	0.72	3.48	0.75	3.66	0.55
Trainers utilized different facilitating strategies so participants could understand the concepts being discussed.	3.36	0.82	3.47	0.72	3.50	0.76	3.45	0.77	3.64	0.58

4.4.2 Learning Competencies

As part of the teachers' perception about training programs, it was measured how teachers would rate their confidence about various learned competencies after they had attended certain training programs. The perception instrument includes six specific sub-domains to measure the level of teachers' confidence about the learned competencies. For specific competencies, please see "Kindergarten Teacher Training Mapping" prepared by MoE through the Education Support Program (ERSP) in Annex xxx. Each one of the mentioned five training programs seeks to cover one or more of the following six domains[25]: "General Knowledge", "Specialized Knowledge", "Planning", "Implementation", "Evaluation & Assessment", and "Professionalism". For example National Curriculum training program (NC) covered all sub-domains while KIDSMART training program covered only two sub-domains which are: general knowledge and implementation.

A scale of 0 to 3 was developed, where 3 would mean strongly confident and 0 not confident at all. All 8 items of the KG-teachers' rating of competencies are summated to a reliable composite scale where the aggregate score is calculated to measure the overall teachers' rating of their competencies. Base on the nature of the composite distribution, the following criteria were employed to determine categories of teachers' rating of their own competencies.

Summated Composite intervals	**0≤0.5**	**0.5≤1.5**	**1.5≤2.5**	**2.5≤3**
Scale	No competency	little competency	somewhat competency	Full competency

As indicated in Table (16), KG-teachers are overwhelmingly confident in the learned competency sub-domains as the overall composite scores for all teachers reached up to 2.6 or more, level of full competency. Variation does not seem to be large. Clearly, KG teachers feel fully confident

[25] The set of items that make up the domains aren't completely similar in terms of number and content depending on the training program.

about their competencies in the measured sub-domains and trained through the different training programs.

Table (16) Teachers' confidence about various learned competencies after they had attended certain training programs

Training Programs	General Knowledge		Specialized knowledge		Planning		Implementation		Evaluation & Assessment		Professionalism	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Wisc.	2.67	.29	2.64	.36	2.79	.39	2.83	.27	2.75	.40	2.86	.28
KS	2.83	.26	-	-	-	-	2.74	.46	-	-	-	-
NC	2.79	.26	2.68	.35	2.82	.42	2.83	.32	2.71	.48	2.86	.34
PA	2.81	.30	2.63	.46	-	-	2.80	.33	-	-	2.85	.29
SS	2.79	.30	2.70	.45			2.82	.36	2.87	.34	-	-

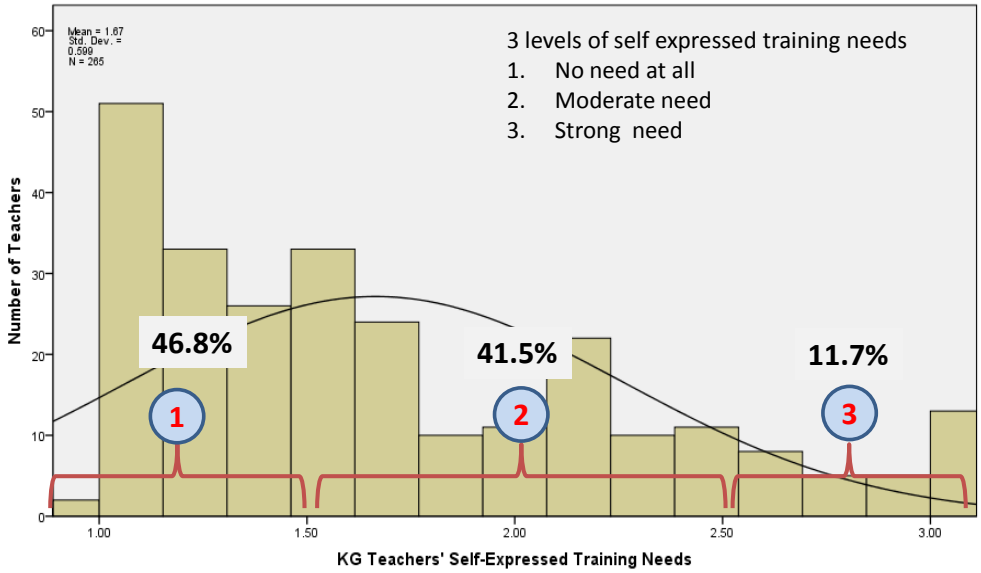
Note: an empty cell indicates that sub-domain is not covered in the training

High confidence or competencies felt by KG teachers after they had been trained should be celebrated as KG teachers would be more likely to respect equality of all children without discrimination, possess the necessary traits to work with children (compassion, patience, intimacy, taking responsibility, accepting criticism, flexibility, scientific integrity, secrecy, self-awareness , and self-actualization), pay attention to physical & psychological needs of children, utilize appropriate teaching strategies to teach different topics, and full understanding of the educational content of KG curriculum about each subject.

4.4.3 Teacher Perceptions of Needs for Future Training

In order to plan potential training of KG teachers, all sampled teachers were directly asked to express needs for 14 specific areas of expertise related to KG teaching and learning. For each expressed need, 3 choices were given to teachers to check, 1) no need at all, 2) moderate need and 3) strong need. Chart (4) shows how teachers expressed their needs in a 14-need composite score. 46.8% of KG teachers expressed "no need at all", which represents the largest majority of KG teachers. Only 11.7% expressed that they strongly need many of the 14 listed training topics. 41.5% expressed a moderate need in the listed training topics.

CHART (4): KG teachers self-expressed training needs



Specifically, as presented on table (17),it was found that the least desired training topics of the list are topics 5, 10, and 11. These are 1) physical environment arrangement for KG children; 2) safety issues in KG classroom; 3) involving parents in children's programs or activities. 60% or more teachers expressed no need at all for these trainings.

Table (17) Teachers' perceptions toward their needs on specific areas of expertise related to KG teaching and learning

	No need	Moderate Need	Strong Need
	%	%	%
Teacher_needs_1 Social/emotional characteristics of KG children	51.5%	30.3%	18.2%
Teacher_needs_2 Physical/motor characteristics of KG children	57.2%	29.9%	12.9%
Teacher_needs_3 Cognitive characteristics of KG children	52.7%	30.2%	17.2%
Teacher_needs_4 Teaching strategies for KG children	47.0%	28.8%	24.2%
Teacher_needs_5 Physical environment arrangement for KG children	62.7%	19.6%	17.7%
Teacher_needs_6 Preparing educational plans for KG children	41.7%	35.6%	22.7%
Teacher_needs_7 Assessment approaches for KG children	49.6%	30.8%	19.6%
Teacher_needs_8 Behavior modification of children	44.6%	35.8%	19.6%
Teacher_needs_9 Teaching thinking skills to children	37.3%	36.9%	25.8%
Teacher_needs_10 Safety in children's classrooms	64.4%	22.0%	13.6%
Teacher_needs_11 Involving parents in children's programs and activities	60.1%	26.2%	13.7%
Teacher_needs_12 Making educational aids and games	52.1%	26.2%	21.7%
Teacher_needs_13 Identifying a gifted child or a child with special needs	42.0%	36.0%	22.0%
Teacher_needs_14 Strategies to engage special needs children in regular classrooms.	38.6%	32.4%	29.0%

On the other hand, the most desired training topics of the list are topics 6, 9, and 14. These are 1) preparing plans for KG children; 2) teaching thinking skills to KG children; and 3) strategies to

engage and teach special needs children. 59% or more teachers expressed either strong or moderate need for the topics.

4.4.4 Overlapping Themes among KG-Training Programs

The Ministry of Education (MoE) and its partners have offered several KG level training programs in order to develop KG teachers' skills as KG education has expanded fast in the past 8 years in Jordan. These programs are Wisconsin program (Wisc), focusing on "Working with Children" (160 hours), National Curriculum program (NC), also named as Interactive System Program (54 hours), KIDSMART Program (KS) (40 hours), and SimSim (SS) program and Parental Awareness (PA) and others.

KG teachers were asked to report on competencies they learned from the five training programs. As we mentioned earlier, they are overwhelmingly confident about the competencies in specified domain areas, 1) General Knowledge, 2) Specialized Knowledge, 3) Planning, 4) Implementation, 5) Evaluation & Assessment, and 6) Professionalism. This result can be, partially, attributed to the training programs. In other words, if training covers a competency domain, teachers who attended the training would feel more competent about that domain. Examining competency domains across all five training programs, revealed that there are overlapping competency themes. Table (18) below shows domain coverage and how they are duplicated across all the training programs.

Table (18) Teachers' perceptions toward the competencies they learned from the five training programs(NC, Wisconsin, Kidsmart, SimSim, and Parental Awareness)

	NC	Wisconsin	Kidsmart	SimSim	Parental Awareness
General Knowledge	✓	✓	✓	✓	✓
Specialized knowledge	✓	✓		✓	✓
Planning	✓	✓			
Implementation	✓	✓	✓	✓	✓
Evaluation and Improvement	✓	✓			
Professionalism	✓	✓		✓	✓

Although there was quite a bit overlap of domains covered in the five training programs, it is interesting to point out that some specific topics under each domain were not completely overlaps. Each program may focus on different aspects of the domain. In fact, the coverage of domains and specific topics within each domain were mapped by ERSP, an USAID/Jordan project partner. For details, please see the document titled Kindergarten's Teachers Training Program Mapping (ERSP 2011). However, to further understand the extent to which the domains were overlapped or redundant, further independently paired correlation analysis of teachers' gained competencies were carried out of the six major subject themes or domains among 5 training programs. For example, analysis of teachers' gained competencies in specialized knowledge after they attended NC training with teachers' gained competencies in specialized knowledge after they attended Wisc training, was carried out to see if there is a significant correlation between the gained competencies in the same domain by different training program. A

significant correlation would tell us that there is a "redundancy" in delivering competencies with the domain. If there is no significant relationship that would indicate that there is no "redundancy". Table (19) below shows list of all paired correlations among all the domains by all the training programs.

Table(19) A significant correlation between the gained competencies in the same domain by different training program

		NC	Wisc.	KS	SS	PA
General Knowledge	**NC**	1	-	-	-	-
	Wisc.	.650**	1	-	-	-
	KS	.551**	.563**	1	-	-
	SS	.695**	.662**	.635**	1	-
	PA	.557**	.438**	.355**	.608**	1
Specialized knowledge	**NC**	1	-	-	-	-
	Wisc.	.643**	1		-	-
	KS		-	1	-	-
	SS	.727**	.567**		1	-
	PA	.678**	.486**	-	.648**	1
Planning	**NC**	1	-	-	-	-
	Wisc.	.446**	1	-	-	-
	KS	-	-	1	-	-
	SS	-	-	-	1	
	PA	-	-	-	-	1
Implementation	**NC**	1	-	-	-	-
	Wisc.	.626**	1	-	-	-
	KS	.606**	.471**	1	-	-
	SS	.672**	.486**	.569**	1	-
	PA	.545**	.422**	.578**	.632**	1
Evaluation and Improvement	**NC**	1	-	-	-	-
	Wisc.	.720**	1	-	-	-
	KS	-	-	1	-	-
	SS					
	PA	-	-	-	1	1
Professionalism	**NC**	1	-	-	-	-
	Wisc.	.628**	-	1	-	-
	KS			-	1	-
	SS	.532**	.208**		-	-
	PA	.574**	.491**	-	.534**	1

From the table, it can be noticed that all paired correlations of all 6 gained competencies (domains) by give training programs are significant, some stronger and some weaker. Stronger correlation coefficient means more "wastage" and weaker correlation coefficient less

"wastage". For example, NC and SimSim programs both cover the subject domain of "specialized knowledge" for KG education, the coefficient is very high at 0.727. This indicates if teachers participated in either NC or SimSim, there would be a large "wastage" if the same teachers attend the other training in terms of gained competencies in "specialized knowledge". On the other hand, if teachers participated in both Wisc. and SimSim training programs, in terms of the gained competencies in "professionalization", there is much less "redundancy" (the correlation coefficient is 0.20). The overall results have further confirmed (or further validated) our earlier finding that subject domains in all five training programs were overlapped and they are "wastage" with no or little value added for the repeat.

4.4.5 Relationship between Self-reported Competencies and Teaching Practices

Earlier, findings showed the mean differences among teachers who attended training programs. It was concluded that attending a single training program would bring about a significant benefit in or effect on KG teaching practice, but any additional training would provide no value-added benefit, suggesting a duplication or wastage if multiple trainings were attended. High level of teachers' self-reported competencies on various subject domains was reported. Now, it is important to present paired correlation analysis results to show relationships between teachers' self-reported competences and the observed practices in classrooms. The pre-analysis hypothesis was that self-reported competency is highly correlated with teachers' classroom practice. However, the results, as shown on table (20)suggested the otherwise.

As shown in Table (20), the paired correlation coefficients between the 6 self-reported competency composites and 3 observed classroom practice composites under each training program are either insignificant indicating no correlation or significant but of small values suggesting weak correlation. However, among the weak correlations, one biggest correlation coefficient is between Good KG practice index and competency in "General Knowledge" under Kidsmart training program (the coefficient was 0.31 (p-value=0.01). This suggests that general knowledge competency gained as result of attending Kidsmart could possibly be a predictor to teaching practice in the classroom.

Table (20) paired correlation analysis of the relationships between teachers' self-reported competences and the observed practices in classrooms

		Good KG practice's index	Social interaction	Educational corners
NC	**General Knowledge**	.151*	.122	.187**
	Specialized knowledge	.132*	.117	.157*
	Planning	.151**	.115	.317**
	Implementation	.190**	.148*	.215**
	Evaluation and Improvement	.199**	.223**	.249**
	Professionalism	.002	.041	.108
Wisconsin	**General Knowledge**	.094	.138*	.135
	Specialized knowledge	.120	.108	.144*
	Planning	.193**	.181**	.126
	Implementation	.223**	.191**	.260**
	Evaluation and Improvement	.130	.139*	.149*
	Professionalism	.078	.081	.140*
Kidsmart	**General Knowledge**	.305**	.369**	.213*
	Specialized knowledge	-	-	-
	Planning	-	-	-
	Implementation	.244**	.229**	.131
	Evaluation and Improvement	-	-	-
	Professionalism			
SimSim	**General Knowledge**	.213**	.202**	.199**
	Specialized knowledge	.136	.141*	.129
	Planning	-	-	-
	Implementation	.128	.103	.141*
	Evaluation and Improvement	-	-	-
	Professionalism	.153*	.159*	.148*
Parental Awareness	**General Knowledge**	-.017	-.014	.079
	Specialized knowledge	.174*	.177*	.218**
	Planning	-	-	-
	Implementation	.167*	.180*	.196*
	Evaluation and Improvement	-	-	-
	Professionalism	.044	.036	.037

Note: * p-value <=0.05; ** p-value<=0.01.

With regard to relationships between the competencies with composites of interaction with children and use of education corners, similar trend of these paired relationship can be seen, either no significant correlation or significant relationship but with small coefficient value suggesting weak or very weak correlation. It can be concluded that self-reported competencies under each training program are somewhat independent of how teachers teach in classroom. In other words, teachers who self-reported a high level of competencies may not necessarily show good teaching practices in classrooms, or interaction with children or use of education corners. This once again implies that training with repeated themes even though they are not completed redundant offer little value to the improvement of classroom practice.

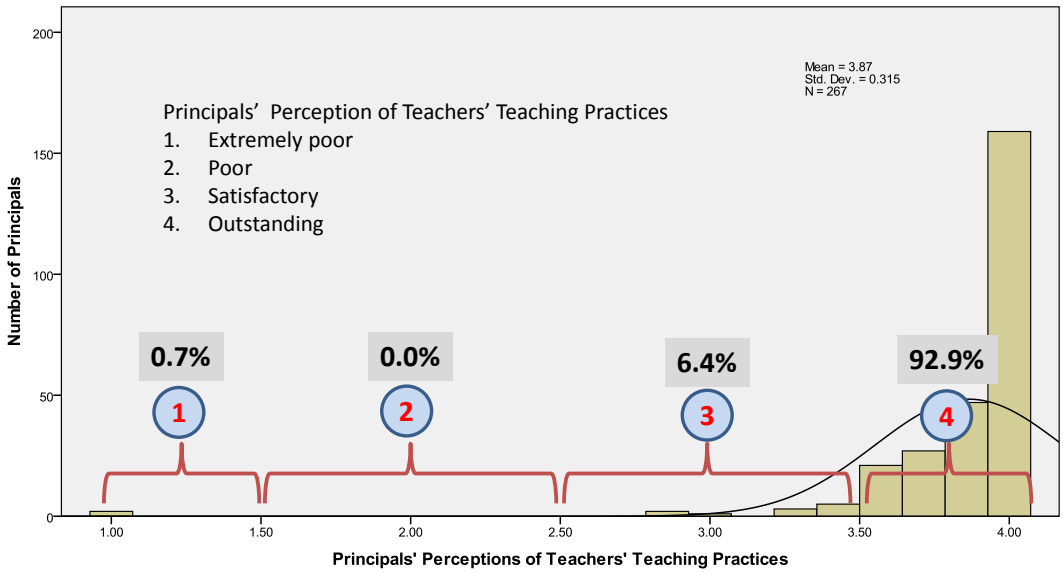
4.5 Principal Perception

In KG study, analysis were carried out for the principals' perceptions about teachers' classroom practice, ability to plan KG classes, and their own KG-training programs. The following results would be presented:

4.5.1 The principals' perceptions toward the KG- teacher practices

To measure principals' perception of KG teaching practice in classroom, principals were encountered with 8 evaluative questions related to KG teacher teaching practice. A composite was developed and statistically tested. Chart (5) below shows a distribution of principals' perception about teachers teaching practice in classroom. As seen, principals' perception of teaching practice in classroom is overwhelmingly positive. The average score of re-scaled composite (1-4) is 3.78, an extremely high value, therefore a high "regard" for teachers on the part of principals. According to the principals, KG teachers in Jordan always or often prepare her classes daily well, care about and ensure the safety of children, understand KG curriculum content well, and use diverse methods to meet diverse needs of children. Only less than 1% of principals expressed a negative opinion about KG teachers' work in classroom as indicated below.

CHART (5): Distribution of principals' perception about teachers teaching practice in classroom

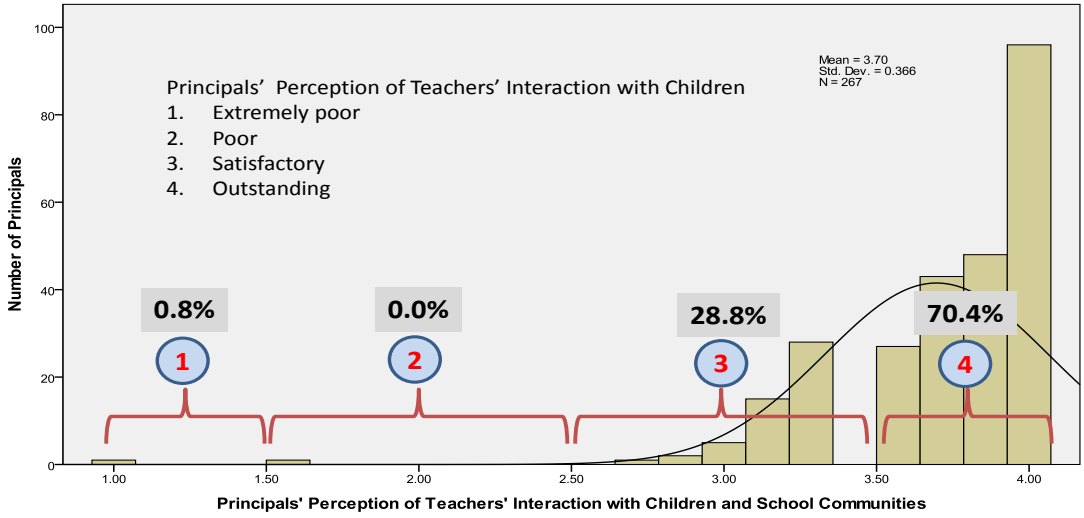


4.5.2 Principals' Perception about Teachers Interactions with Children and School Community

Principals' perception were also examined in terms of how well KG Teachers interact with children, parents and other school staff. The results also revealed, as shown in Chart (6), that principals highly rated KG teachers. The average is extremely high at 3.70 and once again less

than 0.8 % of principals have a negative opinion of KG teachers on interaction with children and school community including parents.

CHART (6): Principals' Perception of Teachers' Interactions with Children and School Community



4.5.3 Principals Perceptions toward Teachers' Planning

All teachers have been trained on planning skills. These include daily lesson plans for class; annual plan for delivering KG curriculum; plan to involve parents, portfolio records for each child. Principles were asked about each of these planning areas. Principals are overwhelmingly positive about teachers' planning activities. Findings as shown on table (21)

Table(21) Principals Perceptions toward Teachers' Planning	Never	Rarely	Sometimes	Always
	%	%	%	%
Teacher lesson plans for class teaching	2.3%	.0%	1.9%	95.8%
Teacher annual curriculum plan	1.5%	.4%	8.6%	89.5%
Teacher plan for involving parents	1.5%	1.1%	10.9%	86.5%
Teacher has a portfolio for each child	1.1%	.0%	3.4%	95.5%

revealed that a great majority of principals reported that most KG teachers ranging from 86.5% to 95.8% always prepare their plans in all areas. Only very small percentage of teachers, ranging

from 1.1% to 2.3% never plan their relevant activities. For example, 2.3% of teachers in principals' opinion never prepared lesson plan on a daily basis.

4.5.4 Principals' Perceptions toward KG training programs.

Principals were asked 20 evaluative questions with regard to their opinions about three major areas covered in KG related management training. These are 1) opinions about training facilities and resources, 2) opinions about quality of training proper, and 3) opinions about learning policies and guidelines of KG education.

Principals' opinions about training facilities, timing and resources appear to vary significantly. Some are quite positive and others are quite negative. Table (22) below shows, for example, that while 56.6% of principals are satisfied or very satisfied with training facilities, timing and provided resources, 43.4% of principals are dissatisfied or somewhat dissatisfied. There is quite diverse opinion in this regard.

Table (22) Principals' Perceptions toward KG training programs (quality, facilities/resources, and policies)

Principals Perception	Very dissatisfied	Somewhat dissatisfied	Satisfied	Very satisfied
	%	%	%	%
Training Facilities, Timing and Resources	5.4	38.0	34.4	22.2
Overall Quality of KG Related Management Training	-	14.9	43.5	41.6
Topics on KG Policies, Guidelines and Management	4.1	9.4	46.2	40.3

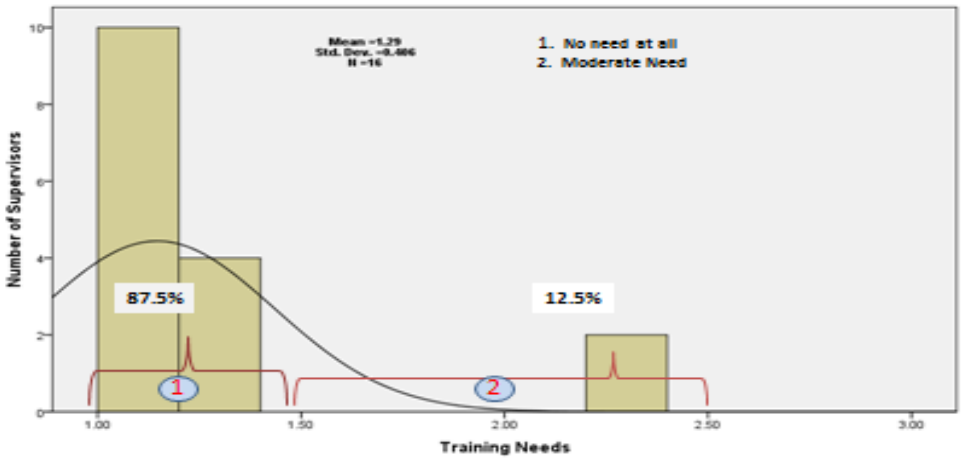
Regarding the quality of training including instructors, topics of various KG guidelines and KG education management, principals seem to be more positive. As seen in the table, 85% of teachers are satisfied or very satisfied with the overall quality of the training and 15% of teachers are not satisfied. With regard to the topics on policy guidelines and KG education management, 86.5% of principals are satisfied or very satisfied and 13.5% are not.

5.6 Supervisors' perceptions of Training Programs

5.6.1 Supervisor perceptions of Needs for Further Training

One of study objectives is to inform and improve training program in the future. For this, 16 supervisors were directly asked how they perceive the need for more training. It becomes clear to us that almost all supervisors expressed no need for any more training (see chart 7.) In fact, supervisors were asked to respond to specific 15 areas of needs, including content knowledge, classroom environment, class management, special needs, etc. Overall needs for further training are minimal. For details see the table (23).

CHART (7): Supervisor Perceptions of Needs for Further Training



Specifically, it was found that the least desired training topics of the list are topics 2, 3, and 5. These are 1) Physical/motor characteristics of KG children; 2) Cognitive characteristics of KG children; 3) Physical environment arrangement for KG children. Supervisors expressed that they do not need at all these trainings.

Table (23) Supervisors' perceptions of further training needs (content knowledge, classroom environment, class management, special needs, etc)

	1 no need	2 Moderate	3 High
needs_1 Social/emotional characteristics of KG children	93.8%	6.3%	.0%
needs_2 Physical/motor characteristics of KG children	100.0%	.0%	.0%
needs_3 Cognitive characteristics of KG children	100.0%	.0%	.0%
needs_4 Teaching strategies for KG children	87.5%	.0%	12.5%
needs_5 Physical environment arrangement for KG children	100.0%	.0%	.0%
needs_6 Preparing educational plans for KG children	62.5%	12.5%	25.0%
needs_7 Assessment approaches for KG children	86.7%	6.7%	6.7%
needs_8 Behavior modification of children	81.3%	12.5%	6.3%
needs_9 Teaching thinking skills to children	73.3%	13.3%	13.3%
needs_10 Safety in children's classrooms	87.5%	6.3%	6.3%
needs_11 Involving parents in children's programs and activities	93.8%	6.3%	.0%
needs_12 Making educational aids and games	75.0%	6.3%	18.8%
needs_13 Identifying a gifted child or a child with special needs	37.5%	43.8%	18.8%
needs_14 Strategies to engage special needs children in regular classrooms.	43.8%	31.3%	25.0%
needs_15 Strategies for collaboration among children	81.3%	6.3%	12.5%

On the other hand, the most desired training topics of the list are topics 13 and 14. These are 1) Identifying a gifted child or a child with special needs; and 2) strategies to engage special needs children in regular classrooms. 56% or more supervisors expressed either strong or moderate need for the topics.

5.6.2 Supervisors' Perceptions about Previous Training

Although detailed quantitative analysis is unnecessary due to the small number of supervisors, 16 supervisors on average are quite positive about the training programs they received in the past. It appears that National Curriculum, Parental Awareness and SimSim programs received no mean score in 2-range category for any of 12 question items. That means these programs are viewed more positive than the other two, Wisconsin and Kidsmart by supervisors in terms of their overall opinion. For details, see table (24) .

Table (24) Supervisors' Perceptions about Previous Training

	Wisconsin		NC		Kidsmart		Parental Awareness		SIMSIM	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Training venue had all equipment and tools necessary to conduct training (printers, didactic materials, etc.).	2.87	1.03	3.33	0.62	3.29	0.99	3.50	0.94	3.31	0.63
Training venue was adequate (lighting, size, accommodations).	2.94	1.00	3.47	0.64	3.21	0.98	3.64	0.75	3.38	0.65
Training was offered at a convenient time.	2.87	1.09	3.27	0.88	2.93	1.21	3.50	0.76	3.23	0.93
Training was conducted at a convenient location.	3.06	0.77	3.27	0.80	3.00	1.11	3.50	0.65	3.23	0.93
Training contents matched your needs.	3.44	0.63	3.47	0.64	3.36	0.93	3.57	0.65	3.46	0.66
Training taught theoretical concepts relevant to early childhood education	3.44	0.51	3.40	0.63	3.29	0.91	3.57	0.65	3.46	0.52
Training provided good practical information and suggestions to be implemented in the classroom	3.38	0.81	3.53	0.64	3.21	1.05	3.36	0.75	3.31	0.86
The facilitator was well prepared to carry out training	3.13	1.03	3.33	0.82	2.79	1.19	3.43	0.85	3.38	0.65

Training started with the facilitator explaining a set of training objectives	3.06	1.00	3.27	0.80	2.86	1.17	3.54	0.66	3.31	0.86
Trainer assessed participants' knowledge and skills	3.06	1.00	3.27	0.70	2.79	1.25	3.43	0.85	3.31	0.86
The facilitator encouraged participants to share their practical experiences	3.19	0.91	3.40	0.63	2.86	1.23	3.57	0.65	3.46	0.52
Trainers utilized different facilitating strategies so participants could understand the concepts being discussed.	2.94	1.00	3.33	0.72	2.86	1.29	3.43	0.85	3.31	0.86

Chapter 5: Conclusion and Implications

In this section, we intend to summarize conclusive remarks and propose to the Ministry of Education in Jordan policy considerations in each point of the key findings. Policy considerations may help the key policy stakeholders to develop action plans based on the findings from this study together with other relevant information and evidence from other reliable sources (e.g. ECD policy framework and development plan).

KG teacher profile

KG education in the MoE is relatively new education component launched and institutionalized in the MoE since ERfKE I about 10 years ago. The sector has grown rapidly. With almost 1,000 KG teachers currently for the government KG schools in the country, 91% of them are permanent and 9% are temporary or contract teachers. Half of the KG teachers are relatively young in KG field, with less than 5 years of working experience. For the past few years, almost all KG teachers have received KG educational training and many received multiple training programs. Most attended training program is National Curriculum, by 88% of all KG teachers. Relatively speaking, only very small percentage of children in Jordan goes to KG schools comparing to an international norm. The high demand and growth of KG education in country implies that there should be new and sustainable investment in KG education. That means there should be more teachers, expanded curriculum and materials, and more classrooms, etc. for the next decade to say the least.

Monitoring KG teachers' classroom performance

MoE KG teachers have demonstrated a high level of teaching performance in classrooms measured in 3 major domain areas in this study, "good teaching practice index", "composite of teachers' interaction with children" and "composite of use of educational corners". Overall teachers teach quite well in KG classes based on the observation study results. The positive finding suggests that that the great majority of KG teachers in MoE have been following the curriculum guideline for "good classroom practices" for KG level, for example, using multiple tools to teach children new knowledge and skills; providing feedback to children about the level of achievement in their learning tasks; using real-life experiences to facilitate children's learning; etc. While the results in general are promising and MoE should celebrate its expansion and quality of KG education for the past decade, to maintain a high growth and quality of KG education requires a stronger commitment to KG education by the government and strengthened capacity of monitoring, evaluation, and school management. Teaching practices have direct and daily impact on children's learning, growth and behavior. Monitoring teaching practice every few years is essential to maintain the high quality of teaching at the national

level, particularly when KG education will continue to expand. District and schools may design more frequent monitoring accordingly.

Teacher's self-reported competencies

Teachers' self-reported competencies are very high as our study shows. In other words, teachers show a high level of confidence in the required domains of knowledge and skills for KG education in Jordan. Most of all measured competency domains are taught in many training programs, including all the five training programs under this study. And almost all 267 KG teachers in the study except for 17 of them participated in at least one training program. A great majority participated in multiple programs up to all five of them. However, a caution must be noted that there has been no "causality link" between the training and the teacher competencies. In other words, researchers could not establish a claim that the teachers' self-reported high level of competencies is the direct result of the training. This is due to the lack of a baseline measure and a valid counterfactual "comparison" group (for more, please see the limitation of this study on page 15). In addition, it is worth reiterating that the self-reported competencies are not all correlated with the index of teaching practices. Many are not correlated at all. That means teachers' confidence level in various knowledge and skill domains is not necessarily a good indicator of actual teaching practices in classroom. For example, many teachers think very highly about their own competencies in student evaluation and assessment area, but we found that the domain area of student evaluation and assessment is the weakest area for teachers. This finding suggests that policy makers need to be cautious about using data from self-reported confidence or competency level, but should rely more on actual teaching practices. In sum, class observation is a more objective measure for an evaluation purpose although it is more costly and must be well organized, scientifically approached and consistently administered.

KG Teacher Training

Many teachers participated in KG training programs, particularly in the five programs under this study, National Curriculum, Wisconsin, Kidsmart, SimSim, and Parental Awareness. This study has shown that the KG training in general has been quite useful and is positively correlated with the index of teaching practice in classroom. For example, teachers who attended a single training program (any training of the five in this study) show a significant improvement in the index of teaching practices in classrooms over those who did not participate at all. In fact, the positive findings are consistent across all five groups of teachers with participation against teachers with non-participation in any of all five training programs. That is a good news. However, the study also shows that any additional training for teachers (for example, attending 2 or more up to all 5 training programs) does <u>not</u> have any value-added effect on the index of teaching practice. In other words, there has been a "redundancy" in training programs such as overlapping themes which might have resulted in a fair amount of "wastage" (time, resources and opportunity cost). This finding suggests that there may be too many KG training programs

on the similar themes, organized too often and too loosely coordinated among funders or sponsors. MoE may provide a stronger leadership and coordination to consolidate and streamline KG training programs based on the national KG curriculum standards and framework and its strategic plan in the growing KG sector. It is also possible that different training programs funded by different sources may focus on special regions of the country so there will be less redundancy in training. For more, see the next.

Assessment of KG Teacher Training Needs

In this study, most KG teachers when they were asked about the needs for further training on various topics expressed no or little interest or need for KG training for the near future. The study confirmed the following hypotheses regarding why there is little interest or need. 1) teachers already learned the topics (proxy of high competencies); 2) teachers already performed effectively in classes (good teaching practices); 3) teachers felt "training fatigue" (more training offers no value-added). However, it is recognized that there are a few topics teachers expressed some level of interest and a few others teachers show no sign of interest at all. For example, the least needed training topics are: 1) physical environment arrangement for KG children, 2) learning about safety issues, and 3) involving parents in KG programs. On the other, the most needed topics are: 1) preparing lesson plans, 2) how to teach thinking skills to KG children, and 3) classroom strategies to engage and teach special needs children. This further implies that not only should KG training be streamlined and consolidated, but also it must be specific skills focused or targeted based on the real needs of teachers. General topics in KG training should be the things of the past for the experienced KG teachers, and new knowledge and skills for the 21st century KG teachers must have should be planned in the future training. Of course, for newly hired KG teachers due to ongoing KG education expansion, the existing training topics should remain in the training programs.

Principals' Perception of Teachers

In our study, principals were asked to rate KG teachers' teaching practices so that the result could be compared against actual teachers' teaching practices through the observation. The result shows that principals' rating is very high, overwhelmingly positive about their teachers' performance. However, when we examined correlation between the principals' rating and actual teaching practices, we found that there was no correlation at all. In other words, the principals' rating of teachers' teaching practices is not related to the observed teaching practices. This implies that principals' opinions in this regard appear to be irrelevant in terms of how teachers actually perform in classrooms. Earlier, we reported that teachers' self-reported competency is not an indicator of actual teaching practices. Now, we conclude that principals' opinion of teachers' practices is not an indicator of actual teaching practice. Once again, we emphasize that the best indicator of teaching practice must be based on class observation.

Follow up KG Study

Based on the findings, we are more confident that it will be of a value-added benefit when a follow up study with the same tools, indicators, and similar scope will be carried out in 2014 as planned. This follow up study will be able to reveal a new evidence of the first "trend". All the indicators in this study will be analyzed in the follow up study so that we can examine how each indicator changes over time. During this study, we developed self-reported competency indicators from teachers, perception indicators from supervisors and principals, and new composite indicators from class observation to measure teaching behavior and performance. These include composite indicators, 18-item good teaching index, 5-item teacher's interaction behavior with kids, and 3-item use of "education corners". We recommend that these indicators will be continuously monitored and evaluated over time for a long run.

Appendix 1:

18 observation items contributing to the KG teaching practices index

	Failed to carry out activity	Needs improvement	Satisfactory	Outstanding
Observation_Practice_5 Teacher tries to keep kids busy with learning activities	.0%	7.2%	46.8%	46.0%
Observation_Practice_10 Teacher links learning activities with children's daily experiences outside school (i.e: green is the color of tress and cucumbers)	3.8%	10.2%	39.1%	47.0%
Observation_Practice_11 Teacher offers multiple recess time (more than once a day) for free play (play time child chooses-- most of the time with teacher's supervision)	1.1%	8.6%	47.6%	42.7%
Observation_Practice_12 Teacher includes time for spontaneous learning (child learns by him/herself through experiences guided by the teacher)	1.9%	10.6%	53.4%	34.1%
Observation_Practice_13 Teachers utilizes tangible materials to reinforce active learning (learning that depends on child's active involvement with teacher and spontaneous learning)	1.9%	6.4%	34.8%	56.9%
Observation_Practice_19 Teacher transitions between different activities and places in a smooth manner (without children becoming agitated or rebellious)	.8%	12.1%	39.2%	47.9%
Observation_Practice_22 Teacher uses teaching tools in a manner that is safe to children.(i. e: scissors , pens , electricity..etc)	.4%	6.8%	33.8%	58.9%
Observation_Practice_23 Teacher communicates rules and instructions to children clearly.	.4%	7.9%	39.0%	52.8%
Observation_Practice_24 Teacher uses several teaching tools (blocks, dough, crayon, puzzle, pictures, tapes...) to teach children new skills and concepts.	1.1%	7.5%	32.3%	59.0%
Observation_Practice_25 Teacher encourages the child to experiment and discover things using her senses.	1.5%	9.7%	41.2%	47.6%
Observation_Practice_26 Teacher introduces academic activities throughout the day (kindergarten math, notions related to science, alphabet, etc).	.8%	5.6%	37.6%	56.0%
Observation_Practice_27 Teacher walks through the classroom, observes children's work, and offers reinforcement and support.	.4%	3.7%	25.1%	70.8%
Observation_Practice_28 Teachers allocated adequate time to conduct all planned daily activities (at the end of the day, she accomplished all proposed tasks)	.7%	8.6%	43.8%	46.8%
Observation_Practice_29 Teacher adapts her classroom practices to address individual differences among children	.7%	15.4%	51.3%	32.6%
Observation_Practice_30 Teacher children to assess each other (peer assessment: to encourage child to assess his peer progress/task)	7.5%	27.4%	45.1%	19.9%
Observation_Practice_31 Teacher uses more than one assessment strategy and tool (checklist, rubric, and worksheet).	3.4%	16.1%	38.2%	42.3%
Observation_Practice_32 Teacher provides kids with feedback about the level of achievement in the tasks	2.6%	12.7%	46.1%	38.6%
Observation_Practice_33 Teacher discuss with the children the tasks they execute	3.4%	11.3%	39.1%	46.2%

Appendix 2-a:

	Failed to carry out activity	Needs improvement	Satisfactory	Outstanding
Observation_Practice_14 Teacher has children work in small groups	.8%	9.0%	36.1%	54.1%
Observation_Practice_15 Teacher reads (books, stories) to children	4.9%	12.9%	35.4%	46.8%
Observation_Practice_16 Teacher gives books to children (to read or see pictures)	7.1%	17.2%	44.6%	31.1%
Observation_Practice_17 Teacher encourages respectful interactions among children (to respect each other's feelings and to empathize).	.4%	4.5%	37.1%	58.1%
Observation_Practice_21 Teacher addresses children by name.	.4%	4.1%	24.7%	70.8%

Appendix 2-b:

	Failed to carry out activity	Needs improvement	Satisfactory	Outstanding
Observation_Practice_6 Teacher organizes educational corners according to class's area and kids number	4.1%	8.6%	28.5%	58.8%
Observation_Practice_7 Teacher clarifies the corners rules for kids	4.1%	7.5%	36.1%	52.3%
Observation_Practice_8 Teacher organized toys and educational tools in its appropriate places	3.4%	6.9%	29.0%	60.7%

Appendix 3:

	Failed to carry out activity	Needs improvement	Satisfactory	Outstanding
Observation_Practice_2 Teacher records presence or absence of children	.4%	3.8%	13.9%	82.0%
Observation_Practice_9 Teacher is attentive to the physical safety of children (watches how children handle school materials, such as scissors, pens, keeps them away from windows, sharp materials, etc..	.7%	4.9%	33.3%	61.0%
Observation_Practice_18 Teacher participates in children's breakfast	3.8%	9.9%	36.5%	49.8%
Observation_Practice_1 Teacher carries out differentiated activities for children with special needs	19.8%	22.7%	44.0%	13.5%
Observation_Practice_20 Teacher uses computers to teach children.	27.6%	12.5%	29.6%	30.4%
Observation_Practice_3 Teacher has the national guideline for the interactive curriculum in the classroom	4.2%	3.5%	9.6%	82.7%
Observation_Practice_4 Kids have their interactive activity books	3.4%	1.5%	12.2%	82.8%