National Center for Human Resources Development(NCHRD)

The Early Development Instrument: Measuring Children's Readiness to Learn in Jordan

Supervised by
Prof Dr. Abdalla Ababneh

Prepared by
Dr. Emad Ababneh **Dr. Ahmad Tweissi** **Dr. Khattab Abu Lebdeh**

The study was carried out in cooperation with the Ministry of Education
Supported by:

United Nations Children's Fund (UNICEF)

Serial No. 187

September, 2018

The Hashemite Kingdom of Jordan
The Deposit Number at The National Library
(2019/3/1210)

Table of Contents

Acknowledgment

The United Nation Children's Fund (UNICEF) has supported conducting this study periodically. This includes but not limited to, partnering with the Ministry of Education(MoE) preparing the study outline, and financing it. Since this study is a priority for the MoE, the Ministry collaborated with the National Centre for Human Recourses Development (NCHRD) to facilitate data collection from the field; thus we hereby express our deep gratitude for their continued support.

We would like to extend our sincere thanks to all those who have contributed to make this study a success, including MoE's educational supervisors who have made outstanding efforts to collect data from the selected schools, as well as the first three-grade teachers and the parents for their collaboration with the supervisors during the data collection process.

Finally, we extend our gratitude to McMaster University for granting MOE the rights to use the Early Development Instrument(EDI) with funding from UNICEF, and for supporting (NCHRD) to score the data.

Executive Summary

The main objective of the study is to measure the levels and percentages of readiness to learn for children in Jordan by using Early Development Instrument (EDI). This survey is the third in a series of surveys conducted in 2010, 2014 and 2018 using the EDI, and through the collaboration between the National Center for Human Resources Development (NCHRD), United Nations Children's Fund (UNICEF), and Ministry of Education(MoE).

A sample of 6,016 children was selected from the first grade students in various directorates of education, as the data on these children was collected in March 2018 from children's teachers and parents. The data were entered into the computer, and was sent later on to McMaster University / Canada for scoring.

Data analysis was conducted, as the study provided useful information in the following areas:

- Measuring the percentage of non-readiness to learn in Jordan, and determining the level of readiness to learn in the EDI's domains according to child's gender, school's location, geographic area, family income, father's education, mother's education, KG enrollment, and KG type.
- Determining the levels of readiness to learn in the school according to the EDI sub-domains, and identify the domains on which children are vulnerable.
- Identifying the factors that explain the variation in readiness to learn, and estimating the relative importance of these factors.
- Tracking the change in levels of readiness to learn for the years 2010, 2014, 2018.

This study attempted to answer the following questions:

Question 1: What is the level of readiness to learn for children enrolled in the first basic grade according to the main domains and sub-domains of the EDI?

Question 2: What is the percentage of the first grade children who are vulnerable(not ready to learn)?

Question 3: Are there statistically significant differences at the level of statistical significance ($\alpha = 0.05$) in the level of readiness to learn for the first grade children due to: child's gender (male, female), geographical area (North, Middle, South), school's location (Rural, Urban), KG's enrollment (yes, no), KG's type(public, Private), family income level, father's education level, mother's education level and child's nationality?

Question 4: What is the level of readiness to learn in the directorates of education according to EDI's domains?

Question 5: Is there a statistically significant correlation at the level of significance ($\alpha = 0.05$) between readiness to learn and the child's gender, school's location, child's enrollment in the KG, father's education, mother's education, family size, parent practices with child, and child behaviors at home?

Question 6: What is the common effect of several independent variables on the level of children's readiness to learn by domain?

Question 7: What is the ability of the following variables: child's gender, school's location, enrollment of the child in the KG, father's education, mother's education, family income, family size, practices of the parents with the child, and the child's behaviors at home, on classifying children to (vulnerable, invulnerable) ?

Question 8: What is the relative importance of the following variables: child's gender, school's location, the enrollment of the child in the KG, father's education, mother's education, family income, family size, the practices of the parents with the child and the child's behaviors at home in predicting child's readiness to learn according to EDI's domains?

Question 9: Is there a change in the level of readiness to learn during the period (2010-2018), and in which domains?

Question 10: What are the percentages of children who are vulnerable (not ready to learn) among children with disabilities?

Question 11: Are there statistically significant differences at level of significance ($\alpha = 0.05$) in readiness to learn between children with disabilities and non-disabled children?

Key Results:

1- The percentage of children who are not ready to learn in one domain of EDI or more EDI's domains has increased from 27% in 2010 and 2014 to 30% in 2018.

2- The highest percentage of non-readiness to learn has been in the physical health and well- being domain, where the proportion of children who are not ready in this domain was (18.2%), followed by the percentages of emotional maturity domain with percentage amounted to (12.2%).

3- The average of children's scores on the linguistic and cognitive development domain is the highest, as it was amounted to 8.5244 of 10 scores, followed by the average of children on the social competencies domain with an average 7.9120 of 10.

4- The difference between the females' average and the males' average was statistically significant at the level of statistical significance ($\alpha = 0.05$) and for the favor of females for all EDI's domains.

5- The difference between the urban's children average and the rural children average was statistically significant at the level of statistical significance ($\alpha = 0.05$) and for the favor of urban's children for all EDI's domains.

6- The difference between the average for the children who enrolled in KGs and the average for the children who did not enroll in KGs was statistically significant at the level of statistical significance ($\alpha = 0.05$) for the favor of children who enrolled in KGs for all EDI's domains.

7- The difference between the average for children who enrolled in private KGs and the average for children who enrolled in public KGs was statistically significant at the statistical significance level ($\alpha = 0.05$) for the favor of children enrolled in the private KGs.

8- The one- way Analysis of Variance (ANOVA) showed that the differences between children's averages by geographical location (North, Middle and South) were statistically significant for all domains.

9- The results showed that the percentage of Jordanian children who are not ready to learn on one domain or more EDI's domains was (28.9%) compared to (35.5%) for non-Jordanian children. Moreover, the averages of Jordanian children were

statistically higher than the non-Jordanian children on the emotional maturity domain and communication and general knowledge domain.

10- The proportion of children with disabilities who were classified as not ready to learn on one domain or more EDI's domains was (71.3%) compared with (26.1%) for children without disabilities. The results also showed that the percentage of children with disabilities those who are not ready to learn on two or more domains of the EDI have reached (47.5%) versus (10.5%) of children without disabilities.

11- The proportion of males who were classified as not ready to learn in one domain or more EDI's domains was (34.8%), while the percentage of females who were classified as not ready to learn was 24.7%.

12- The results showed that the averages of children who enrolled in KGs were significantly higher than those who did not enrolled in KGs regardless of the child's gender, and that the urban children averages were significantly higher than the rural children averages regardless of the child's gender except for the emotional maturity domain, where it was higher among rural females. In addition to that, the averages for children enrolled in private KGs were significantly higher than those who enrolled in public KGs irrespective of child's gender.

13- There were variations in the levels of readiness to learn on the EDI's sub-domains, as there was a weakness in the level of readiness to learn in the physical independence, readiness to explore new things, prosocial and helping behavior, and advanced literacy compared to other EDI's sub-domains.

14- The results showed that the percentage of non-readiness to learn increasing when mother's education, father's education, and family income decreasing.

15- The results showed a statistically significant positive correlation between children's scores on the five EDI's domains and the child's gender, as the probability of being ready to learn in the EDI's domains is higher for females compared with males.

16- The results indicated a positive correlation between children's scores on the five EDI's domains and enrollment in KGs, as well as the mother's education and father's education variables.

17- The results showed that the child behaviors at home and parental care have a positive and statistically significant correlation with readiness to learn, as the child's score on the EDI's domains increasing when the scores on those two scales increasing.

18- The results also showed a negative correlation between children's scores on the EDI's domains and the family size, where the likelihood of getting higher scores in the EDI's domains is decreasing when the family size increasing.

19- The mother's education, child's gender, KG enrollment, and parent-child practices are fundamental variables that explain variations in the levels of readiness to learn on all EDI's domains.

20- It was revealed that, the lowest averages on the physical health domain were in Al-Jeezza directorate of education, Southern Shouna directorate of education. Whereas, the lowest averages on the social competencies were in Al Qaser directorate of education, and Al-Jeezza, directorate of education, the lowest averages on emotional maturity domain were in directorate of military education and Culture, and Southern Shouna directorate of education. In addition to that, the lowest averages on the linguistic development and general knowledge domain were in the Southern Shouna directorate of education, and Al-Jeezza directorate of education. Finally, the lowest averages on the communication skills and general knowledge domain were in Al Qaser directorate of education and Al- Jeezza directorate of education.

21- The results showed that the highest percentages of non- readiness to learn on physical health domain were in the Southern Shouna directorate of education and in Al-Jeezza directorate of Education. Whereas, in social competencies domain, the lowest percentages were in Alqaser directorate of education and in AL- Jeezza directorate of Education, and in the emotional maturity domain the lowest percentages were in Tafileh directorate of education and the Southern Shouna directorate of education. In addition to that, the lowest percentages of non-readiness to learn on linguistic development and general knowledge domain were in Alqaser directorate of education and in Al-Jeezza directorate of education. Finally, the lowest percentages on communication skills and general knowledge

domain were in Alqaser directorate of education and Al- Jeezza directorate of education.

Based on the results of the study, the following suggestions and recommendations can be presented:

First: Develop the necessary measures to reduce the proportion of children who are not ready to learn in Jordan, these measures include the following:

- Expanding the establishment of public KGs, and encouraging the private sector to invest in this sector, especially in the directorates of education, which showed weakness in percentages and averages of readiness to learn.
- Evaluating the quality of education offered to children in public and private KGs and identifying the factors that contribute to the quality of education introduced in the private KGs and benefiting from the international best practices in this field.
- Expansion of full-time and part-time KGs programs, and targeting children of different nationalities with a focus on vulnerable children (such as poor and refugees).

Second: Implement programs and campaigns at the level of kindergartens, schools and local communities to raise awareness of the importance of physical and motor activities for children, and risk consequences on children who spend long periods watching television or using smart phones and digital panels.

Third: Implement training programs on upbringing and parenting methods, and give priority of implementation for the education directorates in which children are weak in all EDI's domains, as well as to illiterate mothers, and mothers who hold a scientific qualification below the secondary school. In light of this, extended programs with wider participations by parents should be provided for mothers, as these programs will contribute to improve readiness to learn by enhancing the empowerment of parents by raising their readiness.

Fourth: Gender inequality should be taken in consideration in the implementation of early childhood programs, so that the focus should be on social competence and emotional maturity domains for males, whereas focusing should be on communication skills and general knowledge domain for females.

Fifth: Develop ECE policies that increase opportunities for reducing the gap between different groups of children, especially the rural children group, low-income families, and families with low parent's education, through conducting studies to analyze current policies and evaluate existed programs.

Sixth: Conducting qualitative studies to identify the factors that contribute to the variation in the level of readiness to learn.

Seventh: Promote the inclusive education programs for children with disabilities in public schools, as well as develop the early detection tools and the early intervention programs for children with disabilities and growth delay. In addition to that, the Washington Group Questions for disability children should be included in the future studies.

Chapter I: Background and significance of the study

Introduction

Educational studies indicate that educational system benefits from investing in early childhood in many ways. On the one hand, investment in this stage reduces the disparities in achievement between different groups, especially among economically and socially disadvantaged children and other children. On the other hand, investment in early childhood promotes long-term economic returns of the country (WHO, 2016).

The first five years of a child's life are crucial for the child's lifelong development. These years pave the way for the future development of children and success at school and life. Early child experiences affect the growth and development of the brain and the creation of neural connections that provide the basis for language, thinking, problem solving, social skills, behavior, and emotional health, so it is important to prepare children to the maximum extent possible in all aspects. At the end of the six-year period, the child is required to go to school. Therefore, the interest in preparing children for learning at school is important. The behavioral domain of school readiness includes physical, social, emotional, linguistic and cognitive skills that children need to succeed at school. School readiness is a measure of how to prepare a child for success at school, in terms of both cognitive and emotional, and indicates that the child has reached a certain stage of development where formal education is useful to him (Ounce prevention fund, 2017)

Parents, primary caregivers and pre-school programs play a major role in preparing a child for school, and research shows that learning begins long before the child enters the nursery, and it is inconceivable that the child is ready for school on his or her own initiative. At first, it is the responsibility of the parents to provide the children with the basic stimuli of love, support and learning opportunities to discover what is new in their world (Pieterse, 2012). And many concerns arise when talking about assessing the readiness of children to school, including: the ability of teachers, parents, administrators, and policy makers to formulate a definition of school readiness; agree on appropriate and ethical ways to assess school readiness, and how to use the information that results from the evaluation process (Aiona, 2005)

School readiness and learning are associated with many social, cultural and economic factors. These factors explain disparities in levels of child's readiness for school learning. In this context, Angenent and Deman (1989) conducted a study aimed at examining the relationship between intelligence, gender, social maturity and school readiness among first-grade children in Netherlands, as the study conducted on a sample of 125 children (75 females, 50 males) who enrolled in first grade in basic schools at the age 6.5 to 7.5 years. The school readiness was measured by the rating of teachers who taught the children, where the study showed a statistically significant correlation between intelligence and school readiness, where correlation coefficient reached (0.38) .There was also a statistically significant correlation between school readiness and gender, as the correlation coefficient between these two variables was (0.34) for the favor of female. On the other hand, the results indicated that there was no statistically significant correlation between the child's social maturity and school readiness.

Olsen (2010) found that the age difference in enrollment in kindergartens, which may be up to 12 months, may be a cause of variation in the level of school readiness. In addition to that, early educational programs are related to children's readiness to learn. Such programs include teaching children the letters and numbers, playing with others and self-reliance skills, parental education programs on child development and parents' responsibilities towards their children, and programs that focus on developing children's academic skills and life skills, as well as programs focusing on teaching children's reading, mathematics and science skills as the basis for building children's life experiences. Research has shown that children who enroll in early school programs are more ready than their non-enrolled counterparts. In these programs, Olsen also mention that parental involvement and parental support for children have a positive impact on the readiness to learn, where families that provide their children with educational experiences help them to move smoothly to school.

The Gray (2012) study aimed to identify the level of school readiness in rural Ireland. A questionnaire was developed to reveal parents' perceptions of their child pre-school experiences and their readiness to school. Given the paucity of pre-school education in rural areas, the attendance of children in pre-school education was based on a small number of sessions, and a small number of children had the opportunity to attend the

whole week, and there were a number of other children did not have access to pre-school education at all, as a result, a number of children began study at the age of four years, less than the compulsory age to enter the school by two years. The sample size of the study was (145) fathers and mothers, where the results showed that about third of parents in this study believed that their child was too young to enter school, and that most children had difficulty adapting to the school with fewer games and opportunities to play.

Gan and Meng (2016) conducted a study aimed at examining the level of readiness to school in a sample of 82 children pre-school children in rural and urban areas in Zeitai city using the school readiness test battery. The results of the study showed that the level of readiness varies between rural and urban children, where rural children achieved lower scores on emotional and social skills, basic knowledge, drawing and language proficiency, whereas their scores were higher in sports skills, and ability to understand spaces and time.

In a study conducted by Petig (2015), the aim of the study was to explore the relationship between KG transition activities, beliefs about school readiness skills, parental involvement in school-based activities, and adapting the child to the KG environment. The transitional activities take several forms: teachers' communication with families through written or personal correspondence, and the school may host some activities in the evenings so that families can explore the school building and classrooms. The study used the longitudinal approach for early childhood - KG classes (1998/1999).The study found that children from higher income families who speak English at home have a positive experience in the activities that prepare the child to move to the KG. In addition to that, the study showed that the families who provide their children with many activities to prepare for the transition to KG were more ready to attend school; these activities are topics or skills that are part of the KG program.

And in the teacher's sense of responsibility for the less-ready children for school, Youn (2016) study examined whether academic intensity, which is the amount of content given to children in the unit of time, and the sense of responsibility towards less-ready children for school can adjust the learning growth gap for these children. The study used the longitudinal study data on early childhood - KGs from the National Center for Educational Statistics (NCES) in the United States. The study showed that children who were exposed

to a high level of "Academic Density" i.e. the time allocated to them for exposure to educational content is more than usual, and teachers have a high sense of responsibility towards them, they performed better than their peers who did not receive such support (academic intensity, teachers' sense of responsibility). Moreover, the teachers' sense of responsibility for these children modified the relationship between school readiness and growth in learning mathematics in the first primary grades, which has contributed to reducing the learning growth gap of children who are less ready for the school. Based on the results, the study recommended continuous support during the school years, as well as preschool to compensate for the poor level of skill when the child enters school.

In relation to the impact of poverty on the children readiness to school, the Bennett (2017) study indicated that poverty can affect children readiness to school in several ways, where children from low-income families are often faced with unstable parental care (such as: learning by playing especially games made by parents for a specific purpose, and modeling that may help children introduce new behaviors appropriate to certain situations), changes in childcare times, poor guidance and nutrition. And according to some studies as indicated by (Bennett, op cit, 2017) children from poor families often have low levels of communication skills, numeracy, ability to write or move letters, focusing, group work, and receive less positive parental care, and have higher levels of cortisol whose increased levels lead to increased stress or lower blood sugar levels, and it was found that elevated levels of this hormone are associated with a lower level of cognitive development for the child.

From the literature review of the subject and the previous studies, it is concluded that:

- Children's readiness to learn and School Readiness are important indicators that reflect the nature of child experiences in early childhood, which are the result of a range of factors and variables that cannot be ignored.
- Factors affecting children's readiness to learn include environmental factors, natural and / or familial and / or social factors, and sometimes go even further, where they may represent an interaction between some or all of these factors.
- Child Parental care that refers to the upbringing of the child in a constant supportive care environment plays a significant role in influencing the level of readiness for learning.

Parental care includes protection against hazards, appropriate nutrition, a sense of belonging and promoting the effective use of language, and allowing child to social interaction.Jordan has a long interest in measuring child readiness to learn in order to enhance the chances of success of the early childhood educational programs to increase children's chances of success and reduce disparities between different groups of children.

Previous studies conducted by NCHRD to measure readiness to school.

Early childhood has received significant attention in all educational development programs, especially Education Reform for Knowledge Economy (ERFKE) in the first phase (2003-2009) and the second phase (2010-2014). These programs aimed at achieving an expansion of KGs building, training KG teachers, curriculum development, parental care programs, setting standards for KGs construction, and developmental standards for children in Jordan, thus contributing to making this sector one of the most vital sectors in the educational system in Jordan. (NCHRD) has prepared many studies related to early childhood, which can be found at: http://www.nchrd.gov.jo/Researches_Ar.aspx, where NCHRD conducted a study to assess KGs environment, and another to evaluate the training programs of KG teachers, and conducted a study related to the interactive curriculum, and a study to validate the developmental standards for Jordanian children in the age group from birth to age less than 9 years. In addition to that, NCHRD conducted studies on measuring child readiness to school which were among the most important studies that conducted regularly during the years 2003-2014. Indeed, the Center carried out a study in (2004) to survey the readiness to school using the Early Year Evaluation instrument (EYE), as the results revealed that (39.7%) of the children were ready for school, and in 2008 the study was replicated using the same tool, where the results showed that (39.7%) were ready to school. In 2010, the Early Development Instrument (EDI) was used instead of Early Year Evaluation (EYE), as EDI is a balanced group-level instrument that takes into account all aspects of the childhood development, while the EYE tends to focus more on cognitive and reading and writing literacy. In addition to that, EDI is easier to implement than the EYE, where the results showed that (73%) of the children were ready to learn, and the

study was replicated using the same instrument in 2014, where the results showed a stable percentage of children ready to learn (73%).

The Study Objectives

(NCHRD), in cooperation with the MOE and with the support of the United Nations Children's Fund (UNICEF), is conducting a survey to monitor readiness to school levels for children in Jordan using the Early Development Instrument (EDI) on a regular basis. In order to adjust the programs and educational interventions carried out by the MoE and other relevant authorities by benefiting from the results of this study. The survey was conducted in 2010 on a national sample, as the study was considered a base-line study to monitor the changes in the levels of readiness to learn during ERfKE, where the change in the levels of readiness to learn in all its domains has been monitored over time. The study was conducted again in (2014).

This study conducted in (2018) to complement the national effort in tracking readiness to learn at the national level, at the geographic regions level, and according to the different categories of children to enable beneficiaries to employ these results in their various developmental programs,

So this study attempted to achieve the following objectives:

1. Identifying the levels of readiness to learn according to the domains of early childhood development and according to gender, location, geographical area, level of family income, level of father's education, level of mother's education and KG enrollment.
2. Identifying the levels of readiness to learn in schools according to the sub-domains of early childhood development, and to determine the sub-domains in which children are vulnerable, according to gender, nationality and child disability.
3. Testing the significance of differences in levels of readiness to learn according to gender, child nationality, and geographical region, directorates of education, location, KG's enrollment, KG's type, family income, level of mother's education, and level of father's education
4. Identify the correlation between readiness to learn and family size, KG's enrollment, parental education, child behavior at home, parental care for the child, and the economic and social status of the child's family.

5. Identify the differences in the level of readiness to learn between children with disabilities and non - disabled on all domains of the childhood development.

6. Monitoring differences in levels of readiness to learn over time for the years 2010, 2014, 2018.

7. Identify the factors that explain the variation in the readiness to learn and to estimate the relative importance of these factors.

Study Questions

The study attempted to answer the following research questions:

Question 1: What is the level of readiness to learn for children enrolled in the first basic grade according to the main domains and sub-domains of the EDI?

Question 2: What is the percentage of the first grade children who are vulnerable (not ready to learn)?

Question 3: Are there statistically significant differences at the level of statistical significance ($\alpha = 0.05$) in the level of readiness to learn for the first grade children due to: child's gender (male, female), geographical area (North, Middle, South), school's location (Rural, Urban), KG's enrollment (yes, no), KG's type (public, Private), family income level, father's education level, mother's education level and child's nationality?

Question 4: What is the level of readiness to learn in the directorates of education according to EDI's domains?

Question 5: Is there a statistically significant correlation at the level of significance ($\alpha = 0.05$) between readiness to learn and the child's gender, school's location, child's enrollment in the KG, father's education, mother's education, family size, parent practices with child, and child behaviors at home?

Question 6: What is the common effect of several independent variables on the level of children's readiness to learn by domain?

Question 7: What is the ability of the following variables: child's gender, school's location, enrollment of the child in the KG, father's education, mother's education, family income, family size, practices of the parents with the child, and the child's behaviors at home, on classifying children to (vulnerable, invulnerable) ?

Question 8: What is the relative importance of the following variables: child's gender, school's location, the enrollment of the child in the KG, father's education, mother's education, family income, family size, the practices of the parents with the child and the child's behaviors at home in predicting child's readiness to learn according to EDI's domains?

Question 9: Is there a change in the level of readiness to learn during the period (2010-2018), and in which domains?

Question 10: What are the percentages of children who are vulnerable (not ready to learn) among children with disabilities?

Question 11: Are there statistically significant differences at level of significance ($\alpha = 0.05$) in readiness to learn between children with disabilities and non-disabled children?

The study Limitations

Limitations of study are those imposed by the nature of the study, which are either objective constraints or temporal constraints or site constraints or human constraints. Therefore, when generalizing the study findings, the following limits should be observed:

- The generalization possibility is determined by the psychometric properties of the instruments, where the validity and reliability of the instruments determine the accuracy of the results obtained from administering these instruments. Indeed, the two psychometric properties (validity and reliability) were examined logically and empirically.
- The results depend on the level of teachers' knowledge of the children at schools, in addition to their seriousness in filling EDI, in spite of the awareness and training of teachers by supervisors on how to fill the study instruments, and the use of the EDI Manual.
- The results of some study questions are determined by the level of availability of the contextual data for aspects of educating child at home.
- The classification of children to children with no disabilities or children with disabilities is based on teacher's rating, and it is not possible to determine whether the ratings are based on medical reports about children. Indeed to avoid this limitation, it is proposed to include the Washington Group's children's questions in future studies.

Chapter II: Study Method and Procedures

This chapter describes the methodology, the statistical population and the study sample, as well as a description of the Early Development Instrument (EDI), its characteristics and method of scoring, as well as a description of the Child Care Instrument which was developed for the purpose of this study. In addition to that, the procedures of the study and the statistical methods used to answer its questions were also described.

The Study Methodology

This study is classified as a descriptive- survey study that focused on determining the percentage of the first grade children who are ready to learn based on a sample of children. EDI and the Caregiver Instrument were used to identify the current status of readiness to learn. Since the EDI proposes to divide levels of readiness to learn into three levels: Vulnerable children, At Risk children, Children (ready, and very ready), the instrument suggests to focus on monitoring groups of children classified by the instrument that they are not ready to learn at school (Vulnerable).

The study population and sample

The study population consisted of all children enrolled in the first grade in the school year 2017/2018, where according to the data provided by the Educational Management Information System(EMIS) in MoE, the total number of children was (191,688) out of which (98,570) were male. The sample size was (6,016) male and female child which were selected from (260) schools, as the schools selected by stratified random sample method.

The sample of the study was selected in two stages: In the first stage, the schools were selected to represent the location (Rural, Urban), gender of the school (males, females, mixed), education directorate, geographical region (North, Middle, and South), and in the second stage, 24 children were selected from each school, so that, if the number of children in the school is less than (24), all children are chosen regardless of the number of sections. Whereas, if the number of children is more than (24) children in one section (24) children are selected using systematic random sample method, and if the number of sections is more than one, the children are distributed equally among the sections so that

the required number is selected based on the systematic random sample. Table (1) shows the distribution of the sample according to some characteristics.

Table 1: The Distribution of the members of the study sample according to some characteristics.

Variable	Category	Number of children	The Percentage %
Gender of the child	Male	3134	52.1
	Female	2882	47.9
Enrollment to KG	Enrolled	3984	69.9
	Not enrolled	1719	30.1
School Location	Rural	2538	42.2
	Urban	3478	57.8
Geographical area	South	1266	21.0
	Middle	2836	47.1
	North	1914	31.8

The Study instruments

The current study used two instruments: the EDI and the Child Caregiver Instrument (CCI). The following are description of these two instruments:

A- EDI

The Early Development Instrument is the main instrument in the study. This instrument was developed in 2000 by the childhood expert Magdalena Janus and Dan Offord at the Offord Center for Childhood Studies to measure children's readiness to learn in school as a Population-based measure. It can be considered as a practical instrument in terms of measuring children's ability to meet diverse school requirements, such as taking advantage of school-based activities, listening to the teacher, cooperating with others, and behavior discipline. The instrument has possessed a suitable validity and reliability indications when it was administered on a large sample of children in Canada. In addition to that, the psychometric properties of the EDI items are reasonable. In general, EDI is characterized by:

- Assist in measuring the performance of groups of children.

- Provide appropriate and varied results that can be used to identify the strengths and weaknesses of children's readiness to learn at different level groups of children
- Provide information on the multiplicity and diversity of the levels of readiness of groups of children in a community, thus facilitating the planning and selection of programs that will improve the quality of the outcomes of these children.

The 103-Core items of the instrument loaded over five main domains in addition to three sets of questions that ask about the experiences, skills, and special problems that the child face before entering the school, therefore any institution intends to use the instrument is free to add all or some of these questions to the core items in consultation with the authors at Offord Center, So that these questions will not be scored or counted within the child's score in any of the domains. Table 2 shows a sample of the instrument items

Table 2: Main and Sub-domains and Examples of the EDI items

Domains of EDI	Subdomains	Examples of items
The Physical Health	• Physical readiness for the school day • Physical independence	• Arrive to school hungry • Shows balance and synergy (moves without colliding objects) • Ability to control things
Social competence	• Social competence in general	• Able to be in harmony with other children
	• Responsibility and respect	• Take responsibility for his actions
	• The direction of learning	• Works independently
	• Readiness to discover new things	• Has a passion to discover new things.
Emotional maturity	• Cooperative and social behavior	• Helps other children when they experience stress.
	• Behavior of fear and anxiety	• Appears to be unhappiness, sadness and depression.
	• Sad Appearance	• Engaged in a physical quarrel
	• Excessive activity and lack of attention	• Cannot sit quietly.
Cognitive and linguistic development	• Principles of reading	• Able to write his name.
	• Pay attention to reading, calculation and memory usage	• Interested in games that include numbers.
	• Advanced reading	• Able to read sentences
	• Numeracy principles	• Can count up to (20)
Communication skills and general knowledge	)No subdomains(	

EDI is used to assess the readiness of children to learn from the age of 4-6 years by a teacher or educator in childhood at the beginning of the second semester of the school year. This will allow the teacher to identify children in terms of their readiness to learn in Child development domains:

- Physical health and wellbeing.
- Social Competence.
- Emotional Maturity.
- The linguistic and cognitive development.
- Communication skills & General knowledge.

And at the same time ensuring that children have entered the new environment in their school and have been able to interact with the stimuli and activities offered to them spontaneously and spontaneity (Janus & Offord, 2007).

In his assessment of the child, teacher can use the EDI guide, which explains and elaborates all the items of the instrument in terms of describing the performance corresponding to each of the rating level used in the rubric, which helps the teacher to better understand the item and thus choose an appropriate assessment of each child's situation.

The EDI is measuring readiness to learn based on the assumption that the child's ability to meet school requirements and to benefit from teaching-learning practices and activities within the school reflects his or her readiness to learn; therefore the following objectives can be achieved when it used:

• Assessing diverse groups of children in different communities, both on a small scale, such as schools and neighboring cities or large-scale groups of children from varying levels, provided that a logical and clear basis for the composition of those groups is used.

• Follow up children over time to measure their development in terms of their skills, knowledge and competencies based on specific criteria.

• Predicting the performance of children in the lower basic and intermediate stage.

Although the EDI can be used to identify the special needs of children, it is not a clinical diagnostic instrument, but serves as an indicator that reflects the right track of children

through the degree to which they have some skills and competencies that are considered a prerequisite for any child before entering school.

The instrument generally focuses on describing and comparing the performance of diverse groups of children in a specific community, where children's scores are used on the different domains to determine the percentages of children at each level of readiness to learn in order to maximize the benefit that children can achieve in school. Each group of children is classified according to their scores on the continuum of readiness to learn in two tracks, where each track indicates the degree of readiness of children to learn, that is, the results of the EDI can be dealt with on two levels:

- **Macro level**, such as comparing the level of readiness of urban children with the level of readiness of rural children.
- **Micro level**, such as comparing the level of readiness of particular school children with the level of readiness of the children of another nearby school.

These levels of readiness to learn are defined based on cut-off scores, which are percentiles: Percentiles 10 (P10), Percentiles 25 (P25), Percentiles 75 (P75), Percentiles 90 (90) Figure (1) shows a representation of children's classification in two tracks and four levels according to their scores on the EDI:

.

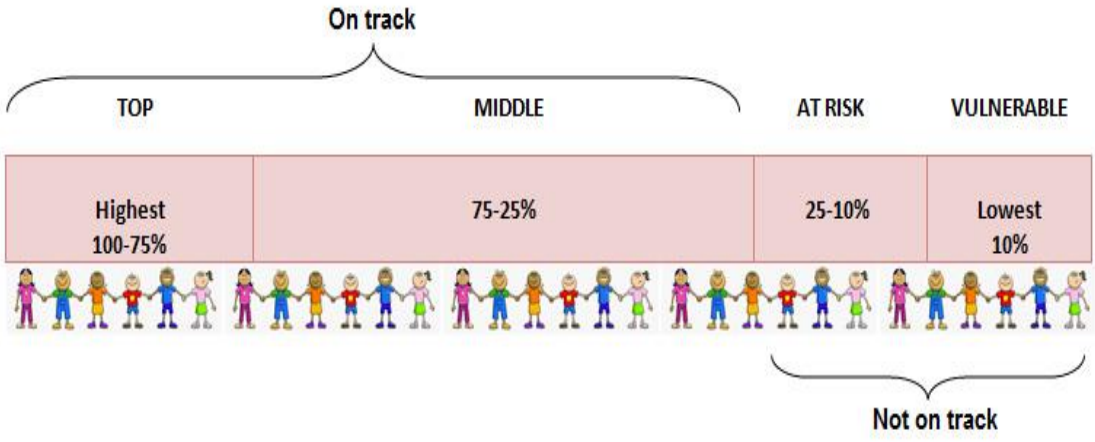


Figure 1: Representation of children by their scores on the EDI.

Table (3) describes the distribution of children on a continuum readiness to learn according to their scores when applying the instrument of early development

Table 3: Description of the distribution of children on a continuum readiness to learn according to their results when applying the instrument of early development

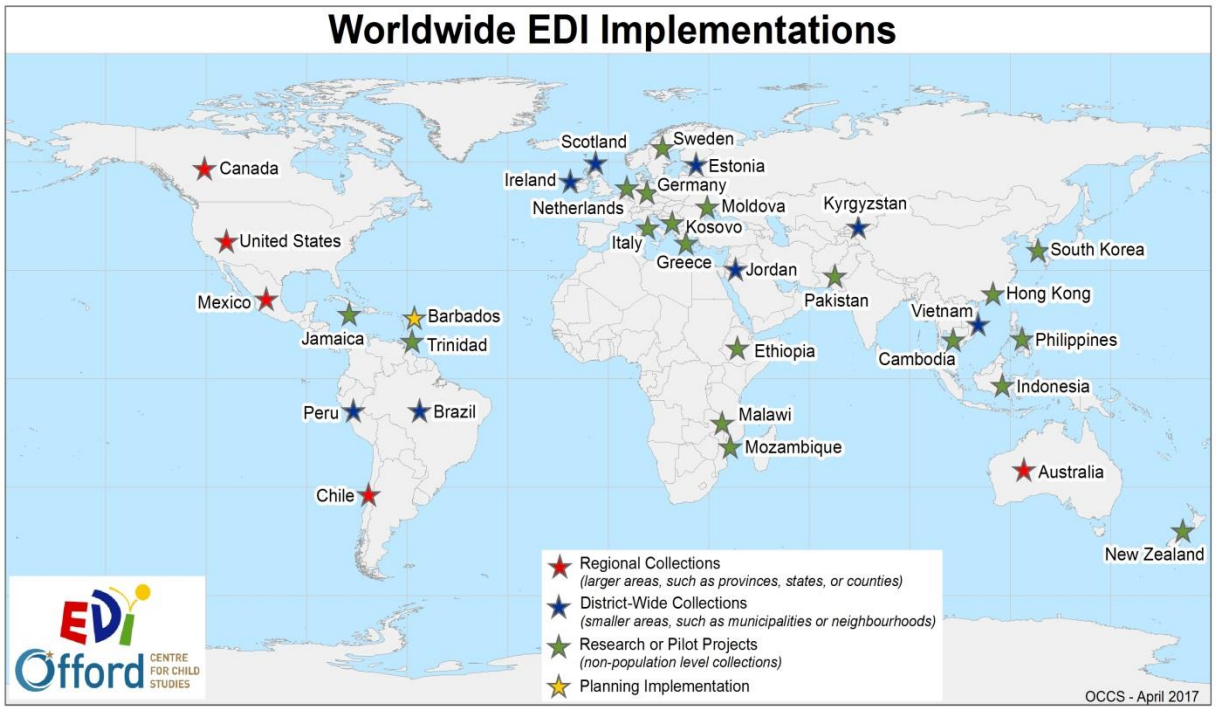
On track Children 	**Children are very ready to learn**	They are the group of children whose scores are greater than the percentile (75). This means that, the children who were classified by this instrument as being very ready to learn are the best 25% of the children performing in the community in which the instrument was applied.
	Children are ready to learn	They are a group of children whose scores are between the percentiles (75) and the percentile (25). In other words, the children who were classified according to this instrument as ready to learn constitute 50% of the children to whom the instrument was applied in the same community.
	**Children at Risk**	They are the group of children whose scores are between the percentile (25) and the percentile (10), meaning that the children who are at risk according to this instrument constitute 15% of the children to whom the instrument was applied in the same in the same community.
Not On track Children	**Children are not ready (Vulnerable Children)**	They are a group of children whose scores are below the percentile (10), meaning that they constitute 10% of the children to whom the instrument is applied in the same community; that is, these children are not ready to learn.

Table (4) shows a definition of the characteristics of children over the percentile 90 (P90) and those below the percentile 10 (p10) on each dimension of the EDI (Janus, 2006)

Table 4: shows the definition of the characteristics of children over the percentile 90 and those below the percentile 10 on all dimensions of the development instrument

Dimensions of the instrument	Characteristics of children above the percentile 90	Characteristics of children under the percentile 10
Social Competencies	A child never has a problem getting along, working, or playing with other children; is respectful to adults, is self-confident, and has no difficulty following class routines; and is capable of pro-social behavior.	A child has poor overall social skills; has regular serious problems in more than one area of getting along with other children—accepting responsibility for his or her own actions, following rules and class routines, being respectful of adults, children, and others' property, having self-confidence and self-control, and adjusting to change; and is usually unable to work independently.
Communication skills and general knowledge	A child has excellent communication skills, can tell a story and communicate with both children and adults, and has no problems with articulation.	A child has poor communication skills and articulation; has limited command of English, has difficulties in talking to others, understanding, and being understood; and has poor general knowledge.
Emotional maturity	A child almost never shows aggressive, anxious, or impulsive behavior; has good ability to concentrate; and is often helping other children.	A child has regular problems managing aggressive behavior; is prone to disobedience and/or is easily distractible, inattentive, and impulsive; is usually unable to show helping behavior toward other children; and is sometimes upset when left by the caregiver.
Language and cognitive development	A child is interested in books, reading and writing, and rudimentary math; is capable of reading and writing simple sentences and complex words; and is able to count and recognize numbers and geometric shapes.	A child has problems in both reading/writing and numeracy; is unable to read and write simple words, is uninterested in trying, and is often unable to attach sounds to letters; has difficulty remembering things, counting to 20, and recognizing and comparing numbers; and is usually not interested in numbers.
Physical health and well- being	A child is physically ready to tackle a new day at school, is generally independent, and has excellent motor skills.	A child has inadequate fine and gross motor skills, is sometimes tired or hungry, is usually clumsy, and may have flagging energy levels.
Logic and thinking	The signs of logic and thinking appear on the child, he has math special skills, and is distinguished in reading and writing and interest in music and the arts and show signs of creativity and problem solving.	The child does not show signs of excellence in mathematics or reading and writing, has no interest in music, arts or sports and has difficulty solving problems in creative ways.

The instrument is widely applied in many countries of the world, and the following map shows the countries in which the instrument is applied and the level at which it is applied.



EDI Scoring

The EDI consists of (111) items out of which (103) items compose the five EDI's domains which are namely: physical health and well-being, social competencies, emotional maturity, linguistic and cognitive development, communication skills and general knowledge. The instrument items are divided into the main domains as follows:

- Physical health and well-being: (13) items.
- Social competencies: (26) items.
- Emotional maturity: (30) items.
- Language and cognitive development: (26) items.
- Communication skills and general knowledge: (8) items.

The responses alternatives varies between two alternatives (yes, no) and three alternatives (very good / good, average, poor / very poor) or (Often / very true, sometimes / somewhat true, never / not true). In the case of the two-alternative items, the score (10) is given for the answer **yes** and score (0) is given for the answer **no**, and in the case of

items with three alternatives score (10) is given for the alternative (very good / good or often / very true) and the score (5) is given for the alternative (average, sometimes / somewhat true) and score (0) for the alternative (very poor, never / not true)

EDI's Sub-domains

As noted above, the EDI consists of five main domains: physical health and well-being, social competencies, emotional maturity, linguistic and cognitive development, communication skills and general knowledge.

The main domains consist of a number of sub-domains, where physical health and well-being consists of three dimensions which are: physical readiness for school day, physical independence, and gross and fine motor skills. Whereas, the domain of social competence consists of four sub-domains which are: overall social competences, responsibility and respect, approaches to learning, and readiness to explore new things, the domain of emotional maturity is also divided into four sub-domains which are: prosocial and helping behaviors, anxious and fearful behavior, aggressive behavior, hyperactivity and inattention. The domain of linguistic and cognitive development consists of four sub-domains which are: basic literacy skills, interest literacy / numeracy and memory, and advanced literacy, and basic numeracy skills, whereas, there is only one dimension for the communication skills and general knowledge which is the main domain itself.

Reliability of the EDI

The reliability coefficient of the EDI was estimated by α-Cronbach equation, and it is amounted to (0.95). Reliability coefficients for the EDI's domains ranged between (0.60) for the domain of physical health and well-being and (0.96) for the domain of social competencies. These values for the reliability coefficients of the EDI's domains are appropriate for the purposes of this analysis. Table (5) shows the reliability coefficients of the instrument by domains.

Table 5: Reliability coefficients for EDI instruments by domains.

The dimension	Number of items	Cronbach Alpha coefficient
Physical health and well being	13	0.60
Social Competencies	26	0.96
Emotional maturity	30	0.91
The linguistic and cognitive development	26	0.93
Communication skills and general knowledge	8	0.91
The instrument as a whole	103	0.95

B- The Child Caregiver Instrument(CCI)

NCHRD's researchers constructed the caregiver's instrument, where the instrument consists of three parts. The first part deals with the background information about the child and his / her family, and the second part covers the parent's practices with the child, , Which consists of 30 items, all of which were formulated to reflect positive behavior, with the exception of (9) items which are: 6, 7, 8, 9, 11, 12, 16,21, 30, all items in this part deal with the caregiving approach with the child , The last part is composed of (12) items dealing with the child behaviors at home, in particular the uses of information and communication technology. The content validity of the instrument was verified by presenting it to two specialists in education, where some items were modified and other items were added.

CCI Scoring

The responses alternatives on the CCI's items consist of three options: Always, sometimes, never ,where the alternative "always" is given the score "3" and the alternative "sometimes" is given the score "2" and the alternative "never" is given the score "1". These scores were reversed for negative items; the higher score indicates that parental practice with the child is consistent with what is expected to increase the child's readiness to learn, while the items of the part that relating to child behaviors at home are

yes-no items, where the response "yes" is given score "1" and the response "no" is given the score "0".

To ensure the items' effectiveness of this instrument, and its psychometric properties, some statistical analyzes were performed by using the sample responses.

First: The Internal Consistency Validity

Part I: Parents' practices with child

To verify the internal consistency validity of this part of the scale, the corrected item – total correlation coefficients of the sample responses were calculated. Table 6 shows the result of calculations.

Table 6: Corrected item-total correlation for the caregiver scale / parent practices.

Items	Corrected item – total correlation
I give my child the independence to practice what he wants.	.0360
I follow the behaviors of my child with interest.	.5100
I put pressure on my child to abide by normal behavior standards	.2440
I encourage my child to complete the tasks I give him.	.4310
I teach my child listen to the instructions.	.4590
I indulge my child in giving him the opportunity to play instead of solving duties.	.2840
I allow my child to watch TV for long periods of time.	.3780
I allow my child to play games for long periods of time.	.3300
I allow my child to play outside the house continuously.	.3280
I read stories to my child regularly.	.2490
I do not give my child any attention	.3110
I tolerate my child constantly when he commits bad behavior.	.2600
I punish my child when he misbehavior	.2640
I share my child playing.	.2840
I give my child the opportunity to do some special tasks for the house (such as cleaning furniture, arranging pots, preparing meals …).	.1690
I do not care about the level of education my child will get in the future.	.3230
When I see that my child is sad or afraid, I often hug him.	.2580
I encourage my child to excel in playing with his peers	.1710
I encourage my child to read.	.4760
I constantly urge my child to respect ethical standards (eg truthfulness, honesty, respect for adults, obedience to parents ...)	.4740

Items	Corrected item – total correlation
I do not care if my child does not complete his duties	.3530
I encourage my child to be an important person in the future	.4780
I try to teach my child a second language (like English).	.3750
I punish my child if he does not pay attention to what I say to him / her.	.2450
I cannot be complacent about the matter of my child's long stay outside the house.	.1340
I teach my child to be well organized in everything.	.4990
I punish my child if he fights with his peers	.2030
I encourage my child to demonstrate his superiority in everything he does.	.4520
I take time to teach my child some useful things (like reading, math, drawing, sports, music ...)	.3890
I do not care about my child's educational future	.2920

Table (6) indicated that the corrected item – total correlation coefficients ranged between (0.036-0.510), and the corrected item-total correlation for items 1, 15, 18 and 25 was less than (0.20) which is the acceptable benchmark for the item's discrimination index based on recommendations of many studies. Consequently these items were deleted from the scale, thus the highest score on the parental practice part is 78 and the lowest score (26), because the response alternative "never" was given a score "1" and the response alternative "sometimes" was given the score "2", while the response alternative "always" was given a score "3".

Part II: Child Behaviors at Home

To verify the internal consistency validity of this sub-scale, the corrected item-total correlation coefficients for all items of the sub-scale were calculated. Table (7) shows this.

Table 7: Corrected item-total correlation for child caregiver / child behaviors at home.

items	Corrected item-total correlation
Does the child use the computer at home?	.5310
Does the child use the internet at home?	.4810
Does the child play the cube game at home?	.2970
Does the mother help her child to do homework?	.3080

Does the father help his child to do his homework?	.1730
Do parents or one play with the child at home?	.3120
Does the mother / father read a story for the child?	.3740
Does the child sleep in his own room?	.3730
Does the child have electronic games?	.5430
Does the child have a Tablet PC (Tablet, iPad, etc.)?	.5280
Are there a computer / laptop at home?	.5420
Does the child have stories at home?	.4300

Table (7) shows that the corrected item-total correlation coefficients ranged between (0.173-0.543), and the correlation coefficient for item (5) was less than 0.20. Therefore, the highest score on the scale is (11) and the lowest score is (0), because the response alternative "yes" is given the score "1" and the response alternative "no" is given the score "0".

Second: The Reliability of CCI

The internal consistency reliability of the two parts of CCI was estimated using Cronbach Alpha, where the results showed that the reliability of the first part of the instrument (parent practices with the child) was 0.79 while the reliability coefficient of the second part (child behaviors at home) was (0.75) and these values of reliability are considered appropriate for the purposes of this study.

Study Procedures

The following procedures have been followed in the implementation of this study. These procedures are consistent through all the study cycles:

1. A technical and financial proposal was prepared by the NCHRD team, which included the cost of conducting this study, preparing it, and writing the final version of the research report. This offer was introduced to UNICEF for approval.
2. The sampling frame used in the study was determined, and then the available database on the first grade students in the MOE was used. Based on that, a national sample was selected to assess the readiness of children to learn in school, and to track changes in readiness to school by time.

3. Communication with MoE has been made to assign a group of educational supervisors with experience in the field of early childhood and the first three grades, in addition to other supervisors. These supervisors were chosen from the various directorates of education in north, middle, and south regions of the kingdom.
4. A special supervisor's guide has been developed, as the guide included a copy of the EDI and its manual, as well as a copy of the CCI. In addition to, all necessary information and guidance for data collection.
5. The study instruments were prepared with a copy of each instrument per each student, where a special label has been placed on each copy containing the school's name, school's national number, and the directorate of education, as well as a student identification number in his school in order to control the required number of children from each school and to match the information provided by these two instruments
6. Envelopes were prepared for each supervisor in accordance with his or her own sample, which is part of the original sample of the study, so that the supervisor envelope contains separate envelopes for each school that the supervisor will visit. Each envelope contains the appropriate number of questionnaires and instruments' manuals that the teachers will use to assess the children's readiness to learn using the EDI.
7. A training workshop was held for the supervisors by NCHRD researchers, through which the data collection materials of each directorate were delivered to the supervisors, in the presence of a coordinator from the 'Department of Training and Educational Supervision' /MoE. During the training, the focus was on the following topics:
    - Clarifying the importance of the study, its objectives, and the study method and procedures.
    - The EDI and it is domains were presented to clarify the way of rating child's readiness to learn. In addition to that, the CCI was also presented.
    - Review and discuss all of EDI's items and the instrument guide, so that the supervisor is able to explain the items to the teachers and help them choose the appropriate items' alternative for each child.

- Provide instructions to supervisors on the mechanism that should be followed to communicate with schools and explain the importance of the study to the school principal and the first grade teacher, stressing the importance of accuracy in filling the background information about children as well as her assessment to the child's readiness to learn according to the items of the instrument.
- Clarify the roles of the educational supervisor during data collection in terms of instructing and assisting the teacher and verify the completion of all data after receiving them from schools and before delivery to the Center.
- Ensuring that there is quality control of the work in data collection through field researchers, so that a group of specialists at the ministry and directorates' level has been assigned to work on controlling the quality of the implementation procedures in line with the design and purpose of the study.

8. Data were collected from the field during the period from 4/3/2018 to 15/3/2018.
9. Receiving the study materials from supervisors after data collection, performing desktop auditing of the instruments administered in the field, reviewing them, coding them, and entering data into the computer.
10. Send data to McMaster University for scoring, based on the agreement between the MoE and the Offord Center at McMaster University
11. Analyzing data and extracting results that answer the study questions at (NCHRD) after the completion of Offord Center scoring of the data.
12. Preparing the study report at NCHRD after conducting the appropriate statistical analysis to answer the study questions

Statistical Methods

A number of statistical methods were used to answer the study questions. Some descriptive statistical methods were used, such as frequencies, percentages and arithmetic means. Some methods of inferential statistics were used, such as the hypothesis testing, such as: ANOVA, Two-Way ANOVA, three-Way ANOVA, MANOVA, as well as correlation coefficients, and multiple regression analysis.

Chapter III: The Study Results

In this chapter, the results of the study were presented according to the sequence of their questions:

Results related to the first question :"What is the level of readiness to learn for children enrolled in the first basic grade according to the main domains and sub-domains of the EDI?"

According to the main EDI's domains, the children lowest average was on communication skills and general knowledge dimension, where it reached (7.4878) on a scale of 10 points, followed by emotional maturity with an average of (7.5237), while the highest average was on linguistic and cognitive development with an average of (8.52). The results showed that the distribution of children scores on all domains is skewed to the left, which indicates that the children scores are high on all domains. Table (8) shows those averages.

Table 8: Descriptive Statistics for children's scores by EDI's domains.

Descriptive Statistics	Physical health and well-Being (0-10)	Social Competence (0-10)	Emotional Maturity (0-10)	Language & Cognitive development (0-10)	Communication skills & General knowledge (0-10)
The Mean	7.5303	7.9120	7.5237	8.5244	7.4878
Median	7.6923	8.4615	7.8846	9.6154	8.1250
standard deviation	.79876	2.03076	1.82162	2.10839	2.59025
The Lowest score	2.73	.00	1.00	.00	.00
The Highest score	10.00	10.00	10.00	10.00	10.00

Therefore, according to the sub-domains, the results were as follows:

- Physical Health and well-being Sub-Domains.

Children in Jordan showed a marked weakness in the domain of physical independence, with an average (3.1553), while their average on "physical readiness for the school day" and " Gross and fine motor skills" were high. Table 9 shows the mean scores of children on the sub-domains of physical health.

Table 9 : The descriptive statistics of children's scores on physical health and well-being sub-domains.

	Physical readiness for school day (0-10)	Physical independence (0-10)	Gross and fine motor skills (0-10)
The Mean	9.9061	3.1553	9.1558
Median	10.0000	2.5000	10.0000
standard deviation	.55324	1.83230	1.59325
The Lowest score	.00	.00	.00
The Highest score	10.00	10.00	10.00

- Social Competencies Sub-Domains

With regards to the children's average on social competencies sub-domains, the results indicated that the children average on the "readiness to explore new things" was less than their average on other sub-domains, followed by the average of "approaches to learning" domain with average score (7.55), The averages for "overall social competencies "and "responsibility and respect" increased to 8.31 and 8.2703, respectively. Table 10 shows the child's averages on social competencies sub-domains.

Table 10: Descriptive Statistics for children's scores by social competence sub-domains.

	Overall Social Competencies (0-10)	Responsibility and respect (0-10)	Approaches to learning (0-10)	Readiness to explore new things (0-10)
The Mean	8.3195	8.2703	7.5581	7.2046
Median	9.0000	9.3750	8.3333	7.5000
standard deviation	2.09978	2.10776	2.45342	2.91198
The Lowest score	.00	.00	.00	.00
The Highest score	10.00	10.00	10.00	10.00

- Emotional Maturity Sub-Domain

The results showed that the children's average at "prosocial and helping behavior" domain was the lowest with a value of (6.40), followed by the average of "hyperactivity and inattention "With a value of (7.54), Then the average of the "anxious and fearful behavior" domain with an average at the value (7.88). Table (11) shows the children's averages on the emotional maturity sub-domains.

Table 11: Descriptive Statistics for children's scores on emotional maturity sub-domains.

	Prosocial and helping behavior (0-10)	Anxious and fearful behavior (0-10)	Aggressive behavior (0-10)	Hyperactivity and inattention (0-10)
The Mean	6.4063	7.8813	8.2640	7.5464
Median	6.2500	8.7500	10.0000	8.5714
standard deviation	2.90542	2.24051	2.62880	2.71719
The Lowest score	.00	.00	.00	.00
The Highest score	10.00	10.00	10.00	10.00

Linguistic and Cognitive Development Sub-Domains.

The results indicated that the average on "advanced literacy" domain was the lowest in comparison to the other sub-domains of the linguistic and cognitive development sub-domains, followed by the average of the domain "interest in literacy/numeracy and memory". Table (12) shows the averages of children on the domains of linguistic and cognitive development.

Table12: Descriptive Statistics for children's scores linguistic and cognitive development sub-domains.

	Basic literacy (0-10)	Interest in literacy/numeracy and memory (0-10)	Advanced literacy (0-10)	basic numeracy (0-10)
The Mean	8.7435	7.8598	7.8140	9.1946
Median	10.0000	10.0000	10.0000	10.0000
standard deviation	2.23440	3.06432	2.97901	1.88700
The Lowest score	.00	.00	.00	.00
The Highest score	10.00	10.00	10.00	10.00

Results related to the second question:" What is the percentage of the first grade children who are vulnerable(not ready to learn)?"

- At the level of all children

To answer this question, the percentages of children who were rated as not ready to learn were calculated of the whole number of children. These percentages were calculated by controlling some of categorical variables, which are: child's gender, location, geographical area, enrollment in KG, type of KG, family income, father's education and mother's education. Table (13) shows these percentages.

Table 13: Percentage of children who are not ready [1] for school on one domain or more EDI's domains according to some variables.

The Variable	Category	Percentage %
All children[2]		30
Gender of the Child *	**Females**	24.7
	Males	34.8
Location	**Urban**	27.8
	Rural	33
Geographical area[3]	**North**	29.1
	Center	28.7
	South	34.3
enrollment in KG,	**Enrolled**	26.7
	Not enrolled	37.4
KG Type *	**Public(Governmental)**	30.7
	Private	25.0
Family income[4]	**Less than (300)JD**	37.4
	(300-599)JD	25.6
	(600-899)JD	22.4
	More than (900)JD	21

1 They are children who are not ready on one domain or more EDI's domains.

[2] These statistics include children who have been classified by teachers as children with special needs and there number 335children

[3] The difference in percentages between north and middle is statistically significant when ($\alpha = 0.05$), the difference in the North-South percentages is statistically significant, and the difference in percentages between middle and south is statistically significant.

[4]The percentages differences by family income were not significant except percentages differences between less than 300 JD category and other categories.

The Variable	Category	Percentage %
Father's education[5]	**illiterate**	53.6
	Lower basic stage (6-1)	40.1
	Upper basic stage (10-7)	34.5
	Secondary	27.4
	Diploma of Community Colleges	22.5
	academic	20.9
Mother's education[6]	**illiterate**	50.3
	Lower basic stage (6-1)	43.9
	Upper basic stage (10-7)	35.9
	Secondary	29.3
	Diploma of Community Colleges	25.8
	academic	20.1

The data indicate that the proportion of children who were classified by the instrument as not ready to learn was 30%. This means that about one-third of the children in Jordan, regardless of their nationality, are not ready to learn (vulnerable). These percentages vary according to some characteristics related to the child or the environment surrounding the child, while the percentage of male children who are not ready to learn was higher than that of females (34.8% versus 24.7%).Also, the results indicated that the percentage of children who are not ready to learn from those who live in the rural is higher than that of those living in the urban, as the percentage for rural area was (33%) compared to (27.8%) for the urban's children. Therefore, when we looking at the data according to the geographic region in which the child's school is located, we note that the percentage of children who were classified as not ready to learn in the South region is higher than in the North and Middle, where the percentage in the South was (34.3%) compared to (29.1%) in the North and (28.7%) in the middle. On the other hand, the results showed that the percentage of children who were classified as not ready to learn from those who had attended KG reached 26.7%, while the percentage of children who had never attended KG was 37.4%

The percentages of children who were classified as being not ready to learn varied according to the family income level, Whereas the results indicated that the percentage of family with low incomes (less than 300 JD) is higher than that of family with higher

[5] All differences by father's education levels were statistically significant, except for the difference between the level of diploma and the bachelor level, which was not statistically significant

[6] All differences by mother's education levels were statistically significant except for the difference between the illiteracy level and the lower basic level and between secondary education and diploma were not statistically significant

incomes (more than JD 900), However this percentage reached (21%) in this category compared to 37.4% to the families whose income is less than (300) JD. Indeed, it was clear that the percentage of children who are not ready to learn decreasing when the level of mother's education and father's education increasing, as the percentage of children whose mothers and fathers were illiterate is more than 50%, while this percentage reached about 20% for children whose mothers' education or father's education is the first university degree or higher.

- Percentage of children who are not ready according to the number of domains

As mentioned earlier the percentage of children who are not ready to learn on one or more EDI's domains was (30%). This percentage is distributed according to the number of domains, as shown in Table (14), as the percentage of children who are not ready on just one dimensions was (16.4%).

(6.9%) of children are not ready to learn on two domains of the EDI, and these percentages have decreased to 0.6% of children who are not ready to learn on the five domains.

Table14: Percentage of children who are not ready for school according to the number of domains

Number domains	Frequency	Percentage %[7]
One dimensions	983	16.4
Two dimensions	416	6.9
Three dimensions	219	3.6
Four dimensions	145	2.4
Five dimensions	38	.6

- Percentage of children who are not ready to learn by domain

The results showed that most of the children are not ready to learn on physical health and well-being domain, thus percentage of children who are not ready at the domain was 18.2% followed by emotional maturity domain with percentage amounted to (12.2%). Table (15) shows the percentage of children who are not ready to learn by domain.

[7]Differences in ratios due to rounding.

Table 15: Percentage of children who are not ready to learn by the domain

The Domain	Percentage%
Physical health and well being	18.2
Social Competence	7.5
Emotional Maturity	12.2
Language & Cognitive development	8.2
Communication skills & General knowledge	9.2

- According to child's Gender

When we look at the percentages of children who are not ready to learn, according to child's gender (male, female) by domain, we note that the percentage of male children who are not ready to learn on all domains was higher than females children, the highest differences between these percentages were found on physical health domain.

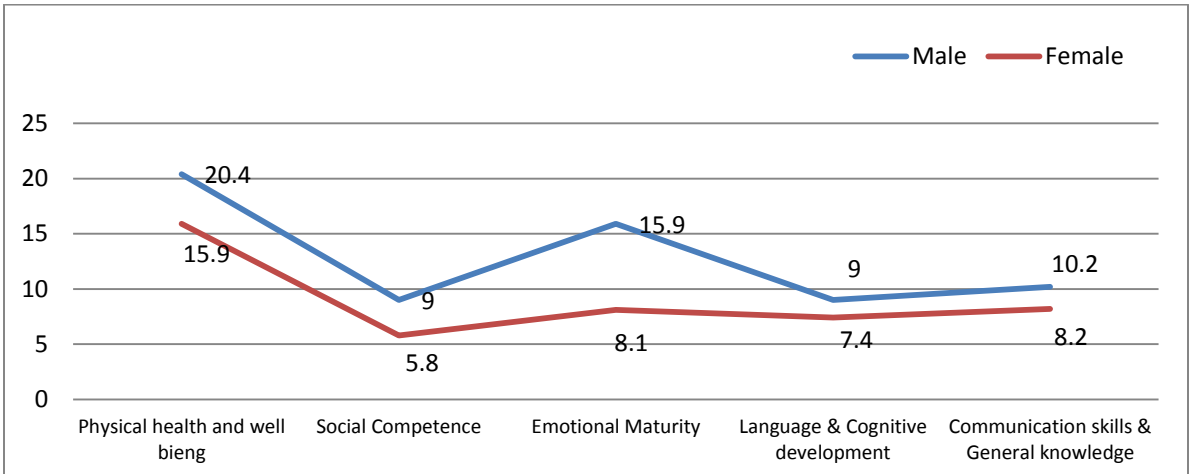


Figure 2: Percentages of children who are not ready according to gender and domain

According to child's nationality

The highest percentage of children who are not ready to learn was among children of Palestinian nationality, where it reached (39.1%), while the lowest percentage was among children of Iraqi nationality. The percentage of children who were not ready to learn from

Jordanian nationality was 28.9%.In the case of Syrian children, the percentage of children who are not ready to learn is 35%. Note the percentages shown in table (16).

Table16:Percentage of children who are not ready to learn according to the child's nationality.

Children Nationality [8]		Number of children	Percentage %[9]
	Jordanian	4998	28.9
	Palestinian	92	39.1
	Iraqi	27	14.8
	Syrian	569	35
	Egyptian	63	30.2
	Others	46	34.8

The results showed that the percentage of non-Jordanian children (regardless of nationality) who were not ready to learn on one domain or more was 35.5% compared with 28.9% for Jordanian children as shown above. On the other hand, the results showed that the average of Jordanian children was higher than the average of non-Jordanian children in all EDI's domains. However, the T test of independent samples showed that the apparent differences between the averages were statistically significant in terms of emotional maturity and general knowledge for Jordanian students, while it was not statistically significant on other domains. Table (17) shows these averages.

Table 17: Children's averages **on the EDI's domains by nationality (Jordanian, non-Jordanian)**

Nationality		Physical health	Social Competence	Emotional Maturity	Language & Cognitive development	Communication skills & General knowledge
non-Jordanian	**Number of children**	954	1007	991	1006	1007

[8]When selecting the sample, the child's nationality was not considered as a variable on which the sample was selected based on it because of the lack of prior information on the nationality of the child.

[9]The differences between Jordanians and Egyptians, Palestinians and Syrians, Palestinians and Egyptians, Syrians and Egyptians were not statistically significant

	The average	7.4762	7.7591	7.2729	8.3665	7.2714
Jordanian	**Number of children**	4751	4959	4857	4958	4986
	The mean	7.5265	7.8904	7.5374	8.4911	7.4611

Results related to the third question: "Are there statistically significant differences at the level of statistical significance (α = 0.05) in the level of readiness to learn for the first grade children due to: child's gender (male, female), geographical area (North, Middle, South), school's location (Rural, Urban), KG's enrollment (yes, no), KG's type(public, Private), family income level, father's education level, mother's education level and child's nationality?"

When controlling some demographic variables, we notice that there are apparent differences between the means according to these variables, as females outperformed males in physical health domain, social competencies domain and emotional maturity domain, while the male means were higher than the female means on the domains of linguistic and cognitive development domain and communication skills and general knowledge domain.

When controlling school's location, we note that the mean scores of the urban children were higher than the mean scores of rural children in all EDI's domains. As for the geographical location, we note that the mean scores of the children from the north region and the children of the middle region is higher than the mean scores of the children from the south on all EDI's domains, where these increment were statistically significant at the level of statistical significance (α = 0.05)[10] for all domains except for social competencies domain in which the differences between the children from the south region and children from the north region were not statistically significant. On the other hand, the results showed that means differences between the children of the north and the middle were not statistically significant in three domains: physical health, emotional maturity, and linguistic and cognitive development, while the differences were statistically significant in two domains: social competencies, communication skills and general knowledge, and in favor for the children of the middle region.

[10]The Scheffe' Test was performed for dimensions comparisons

In general, the results indicated that there was a pattern of differences between the means scores according father's education and for the children whose fathers' education level is higher. However, when scheffe test for post hoc comparisons was performed, it was found that the differences between the arithmetic means on physical health domain were not statistically significant for children whose parents' education is lower basic stage (1-6) and children whose parents' education is higher basic stage (7-10), as well as between arithmetic means for children whose parents' education is secondary or diploma and children whose parents' education is bachelor and intermediate diploma.

In the social competencies domain, the results indicated that there were no statistically significant differences between the arithmetic means for children whose parents' education is secondary and intermediate diploma, and between the arithmetic means for children whose parents' education is university education and intermediate diploma. In the domain of emotional maturity, the results indicated that there were no statistically significant differences between the means for children whose parents' education is lower basic level (1-6) and upper basic level (7-10), as well as between means for children whose parent's education is upper basic level and intermediate diploma, and between the means for children whose parents' education is secondary and intermediate diploma, and between means for children whose parents' education is secondary and university education, as well as between means for children whose parents' education is university education and intermediate diploma.

In the domain of linguistic and cognitive development, the results indicated that there were no statistical differences between means for children whose parents' education is intermediate diploma and for children whose parents' education is university education. In the domain of communication skills and general knowledge, the means differences were not statistically significant between children whose parents' education is secondary and children whose parents' education is intermediate diploma.

When we calculating means for the child's physical health scores by mother's education, it was revealed that there were no statistically significant differences between means for children whose mothers' education is illiterate and children whose mothers' education is lower basic level (1-6), as well as between means for children whose mothers' education is lower basic level 1-6) and children whose mothers' education is

upper basic level (7-10), as well as between means for children whose mothers' education is intermediate diploma and children whose mothers' education is university education.

In the domain of emotional maturity, the results showed that the difference in means between children whose mothers' education is lower basic stage (1-6) and children whose mothers' education is illiterates was not statistically significant. Also, the difference between means for children whose mothers' education lower basic stage and children whose mothers' education is upper basic stage was not statistically significant, as well as the difference between means for children whose mothers' education is intermediate diploma and children whose mothers education is secondary. Also, the difference between means for children whose mothers' education is intermediate diploma and children whose mothers' education is university degrees was not statistically significant.

In the domain of linguistic and cognitive development, it was found that the difference between means for children whose mother's education is intermediate diploma and children whose mothers' education is university degrees was not statistically significant. Also, in the domain of communication skills and general knowledge, the differences between means were statistically significant among the following groups: illiterate and lower basic stage, lower basic stage and upper basic stage, intermediate diploma and university degree.

The data indicate that there are apparent differences between means on different EDI's domains according to child's family income. When we test the significance of these differences, it was appeared that there were no statistically significant differences in physical health domain and emotional maturity domain between means for children whose families' monthly income (300-599) JD and children whose families' monthly income (600-899) JD. Also, the differences between means on these two domains were not statistically significance for children whose families monthly income (600-899) JD and children whose families monthly exceeding (900) JD. As for social competencies domain, linguistic and cognitive development domain, and communication skills and general knowledge domain, the differences between means were not statistically significant for children whose families monthly income ranging from (600-899) JD and children whose families monthly income exceeding JD (900).

Moreover, the results showed that there were apparent differences[11] between the children means according to their enrollment in the KG, as the differences were statistically significant for the benefit of children who had already attended KG. On the other hand, the results showed that the mean scores of children who enrolled in private KGs were higher than the mean scores of children who enrolled in public KGs, where the differences in means were statistically significant at the level of significance ($\alpha = 0.05$) and among all EDI's domain. Table (18) shows the mean scores of children on EDI's domains according to the variables: child's gender, school location, geographic region, father's education, mother's education, family income and enrollment in KG.

Table 18: The means of children's rating on the EDI's domains according to the variables: child's gender, location of the school, geographic region, and father's education, mother's education, family income and enrollment in KG.

The variable	category	Physical health (0-10)	Social Competencies (0-10)	Emotional Maturity (0-10)	Language & Cognitive development (0-10)	Communication skills & General knowledge) (0-10)
gender[12]	Male	7.4892	7.6293	7.1509	8.6240	7.6747
	Female	7.5492	8.1279	7.8650	8.3284	7.2036
location[13]	Urban	7.5618	8.0279	7.5385	8.6300	7.6290
	Rural	7.4579	7.6482	7.4291	8.2502	7.1549
[14]geographic region	North	7.5585	7.7613	7.4726	8.5103	7.3307
	Middle	7.5221	8.0494	7.5893	8.5540	7.6699
	South	7.4476	7.6213	7.3022	8.2201	7.0379
Father's education[15]	Illiterate	7.1507	6.5060	6.7497	6.7646	5.7785
	Lower basic	7.3883	7.2972	7.2020	7.7113	6.5643

[11]When conducting the Multivariate Analysis of Variance (MANOVA), considering that the domains of the instrument are interrelated, the statistical significance of the apparent differences of all domains did not differ.

[12] The T test for independent samples showed that the differences between the males and females on all EDI's domains were statistically significant in favor of females on the domains; physical health, social competencies and emotional maturity, while differences were in favor for males on linguistic and cognitive development domain.

[13]The T test for independent samples showed that the differences between the averages of the Urban's children and the average of rural children on all domains were statistically significant when ($\alpha = 0.05$) in favor of Urban's children.

.

[14]The one-way Analysis of Variance(ANOVA) showed that the average differences of all domains were statistically significant at the statistical significance level ($\alpha = 0.05$).

[15]The one-way Analysis of Variance ANOVA showed that the average differences of all domains were statistically significant at the statistical significance level ($\alpha = 0.05$).

The variable	category	Physical health (0-10)	Social Competencies (0-10)	Emotional Maturity (0-10)	Language & Cognitive development (0-10)	Communication skills & General knowledge) (0-10)
	stage(6-1)					
	Upper basic stage(10-7)	7.4216	7.6589	7.3368	8.2003	7.0817
	Secondary	7.5443	7.9545	7.6199	8.6264	7.5557
	Diploma of Community Colleges	7.6840	8.5161	7.7017	9.1997	8.3674
	Academic (bachelor, master PhD)	7.6840	8.5161	7.7017	9.1997	8.3674
Mother's education[16]	**Illiterate**	7.1966	6.7751	7.0733	6.9110	5.9882
	Lower basic stage(6-1)	7.2703	7.2587	7.0069	7.6185	6.5299
	Upper basic stage(10-7)	7.4280	7.4448	7.2540	8.0762	6.8583
	Secondary	7.5236	7.8310	7.5391	8.4637	7.3580
	Diploma of Community Colleges	7.6466	8.1468	7.6170	8.8850	7.8855
	Illiterate	7.6504	8.4754	7.7491	9.1693	8.2631
Level of family [17]income	**Less than (300)JD**	7.3978	7.3747	7.2863	7.9012	6.7617
	(599-300)JD	7.5816	8.1001	7.6056	8.7654	7.7624
	(899-600)JD	7.6267	8.5001	7.6633	9.1322	8.3052
	More than(900) JD	7.7172	8.5542	7.8679	9.2902	8.2142
Enrollment in KG [18]	**Enrolled**	7.5836	8.0691	7.5486	8.7216	7.7377
	Not enrolled	7.3678	7.4253	7.3560	7.9292	6.7590
	Public	7.4889	7.7486	7.3892	8.2817	7.2833

[16]The one-way Analysis of Variance ANOVA showed that the average differences of all domains were statistically significant at the statistical significance level ($\alpha = 0.05$).

[17]The one-way Analysis of Variance (ANOVA) showed that the average differences of all domains were statistically significant at the statistical significance level ($\alpha = 0.05$).

[18]The T test for independent samples showed that the average difference between the scores of children who attended to KG and those who did not attend to KG on all domains of the instrument was statistically significant in favor for those enrolled.

The variable	category	Physical health (0-10)	Social Competencies (0-10)	Emotional Maturity (0-10)	Language & Cognitive development (0-10)	Communication skills & General knowledge) (0-10)
Type of KG[19]	Private	7.6227	8.1757	7.6287	8.8756	7.8753

Results related to the fourth question:" What is the level of readiness to learn in the directorates of education according to EDI's domains?

To answer this question, we first calculate the percentage of children who were classified as not ready to learn on every EDI's domains. Furthermore, the mean scores of the children were calculated on these domains. In both cases, the directorates were ranked in descending order according to percentages and means.

A- Percentages of readiness to learn according to the education directorate.

The results showed that the highest percentage of non-readiness (vulnerable) on physical health domain was in the Southern Shunah directorate of education with percentage amounted to (44.3%) followed by Jeezzah directorate of education with percentage (37.4%),while the lowest percentage was for al-Salt directorate of education with percentage of (5.9%).

With regard to social competencies domain, the highest percentage of non-readiness was for Al-Qasser directorate of education with percentage of (26.5%), followed by al-Jeezza directorate of education with a percentage amounted to (25.2 %.), whereas, the lowest percentage was for Theban directorate of education and directorate of military education and culturewith percentages (2.5%) and (2.2%), respectively.

Whereas, for emotional maturity domain, the highest percentages of non-readiness was for Tafileh directorate of education by (100%), followed by Southern Shouna directorate of education with percentage amounted to (39.3%). The lowest percentages of non-readiness in this domain were for Ma'an district directorate of education and Bani Qanana directorate of education with percentages reached to (4.8%) and (3.6%), respectively. With regard to linguistic and cognitive development domain, the highest percentage of non-readiness was in Al-Qasser directorate of education with percentages amounted to (23.7%) followed by Jeezza directorate of education with percentage of (22.6%). The

[19]The T test for independent samples showed that the differences between the scores of children enrolled in private KGs and those enrolled in public KGs were statistically significant at the statistical significance level ($\alpha = 0.05$) in favor for the children who enrolled in private KGs.

lowest percentages were in the Bani Obaid and Qasbah Mafraq directorates with (2.5%) for each.

Finally, the results showed that the highest percentage of non-readiness in communication skills and general knowledge domain was in Al- Qaser directorate of education by 25.6%, followed by Al-Jeezza directorate of education by 23.3%.The lowest percentages were in the Al-Marfaq district directorate of education and the Theban directorate of education. Table (19) shows the descending order of non-readiness percentages according to EDI's domains and the directorate of education.

Table (19) The descending order of non-readiness to learn according to EDI's domains and the directorates of education.

Percentages%(Social Competenc	Education Directorate
26.5	Alqaser
25.2	Aljeezah
20.3	Ajloon
17.9	Lewa Sahab
14.2	Lewa Alqweesmah
12.3	Jarash
12.1	Amman district
11.2	Alaqhwar Aljanoobiah
11.0	Albadeiah Alshmalieh A
10.3	Albadeiah Aljanoobiah
9.8	Alshowneh Aljanoobiah
9.5	Madapa
9.2	Petra
8.9	Alaqhwar Aljanoobiah
8.7	Almazar Aljanoobi
8.4	Alramtha
8.1	Lewa Wadi Alseer
8.1	Altafeelah
7.5	Alzarqa Aloola
7.5	Almazar Alshmali
7.4	Bseera
7.3	UNERWA
6.6	Lewae Altiabiah Walwes
6.5	Aljkarak district
6.0	Albadeiah Alshmaliah A
5.9	Almouqar
5.9	Deer Ala
5.7	Bani Obeed
5.5	Alshowbek
5.2	Alzarqa Althaniah
5.2	Aqapa
5.0	Al Koorah
4.5	Maan district
4.4	Bani Kanan
4.2	Alsalt
4.1	Ain Albasha
4.0	Irbid district
3.5	Alrsiafeh
3.4	Naoor
3.3	Lewa AlJameah
2.7	Lewa Marka
2.5	Private directorate
2.5	Mafraq district
2.5	Thieban
2.2	Ministry of defence directorate

Percentages %(Physical Health)	Education Directorate
44.3	Al Shooneh Aljanobiah
37.4	AlJeezah
35.6	Lewa Wadi Alseer
32.0	Alqaser
29.4	Lewa Alqweesmah
28.7	Bseera
27.0	Ministry of defence direct
27.0	Jarash
26.1	Altafeelah
25.9	Alkarak district
25.5	Ajloon
23.9	Alramtha
22.2	Lewa Marka
22.2	Madaba
22.1	Lewa Sahab
21.7	Alachwar Aljanoobiah
20.7	Amman District
20.5	Deer Ala
19.0	Al aqaba
18.8	Almoqar
18.5	Alshowbek
17.9	Alpetra
17.5	UNRWA
17.4	Alachwar Alshmaleah
16.8	Alzerqa Althaneiah
16.0	Albadiah Aljanoobiah
15.9	Almazar Aljanobi
15.7	Irbid district
15.2	Albadiah Alshmaleiah Alcharbiah
15.2	Bani Obiad
14.4	Alrsiafeh
13.4	Private directorate
12.6	Almazar Alshmalee
12.6	Bani Kananah
12.4	Al badiah alshmaliah Alshrqiah
12.2	Lewa Alwestiah
11.4	Alkourah
11.2	Maan District
10.0	Naoor
9.9	Lewa Al jameah
9.5	Ain Albasha
9.2	Al mafraq district
7.9	Theeban
7.3	Alzarqa Aloola
5.9	Alsalt

Percentages (lanuage&Cognitive development)	Education Directorate
23.7	Al Qaser
22.6	AlJeezah
20.9	Alshoneh Aljanobiah
18.6	Jarash
17.7	Altafeelah
14.5	Deer Ala
13.5	Lewa Sahab
12.8	Amman district
12.5	Lewa Alqweesmah
12.3	Ajloon
12.1	Alaghwar Aljanobiah
11.2	Alshoobek
11.0	Albadiah Aljanobiah
10.5	Alramtha
10.2	Albdiah Alshmaliah Alg
9.7	Alrseifah
9.7	UNRWA
9.3	Petra
9.2	Naoor
8.4	Madapa
8.0	Lewa Wadi Alsser
7.8	Bani Kananh
7.0	Almazar Aljanoobi
6.9	Alaghwar Alshmaliah
6.8	Aqapa
6.7	Defenc Directoarte
6.7	Al mazar Alshmali
6.6	Lewai Altiabeh Walwestiah
6.5	Albadiah alshmaliah Alshrqiah
6.1	Alzarqa Althaniah
5.9	Alkoorah
5.9	Almouqar
5.6	Maan district
5.5	Alzarqa Aloola
5.3	Lewa Marka
5.2	Bseera
5.1	Alsalt
3.7	Irbid district
3.3	Lewa Aljameah
3.2	Private Directorate
3.1	Ain Albasha
2.9	Alkarak district
2.5	Theeban
2.5	Bani Obeed
2.5	Mafraq district

Percentages %(Emotinal Maturity)	Education Directorate
100.0	Altafeelah
39.3	Alshowneh Aljanoob
30.3	Ministry of Defence I
25.2	Jarash
21.6	Alqaser
19.5	Aqapa
19.4	Bseera
18.7	bani Obeed
18.5	Ajloon
18.3	Almafraq district
17.5	thieban
16.8	Albadiah Alshmaliah Alchrbiah
16.4	Lewa Alqweesmah
13.9	Al Jeezah
13.8	Al mwaqar
13.5	Lewa Sahab
13.0	Alkarak district
12.4	Albadiah Aljanobiah
12.3	Al mazar Alshmali
12.0	Naoor
11.3	Private directorate
11.3	UNERWA
11.2	Al aqhwar Aljanoobiah
10.9	Lewa Marka
10.7	Lewa Wadi Alseer
9.9	Al zarqa Aloola
9.6	Almazar Aljanobi
9.2	Alzarqa Althaniah
9.0	Al aqhwar Alshmaliah
8.7	Deer Ala
8.6	Madapa
8.2	Albadiah Alshmaliah Alshrqiah
7.9	Alqoorah
7.7	Lewaey Altiabah walwestiah
7.6	Alqoorah
7.5	Irbid district
7.1	Al Ramtha
6.3	Ain Albash
5.8	Petra
5.6	Alshobek
5.6	Lewa Aljameah
5.3	Alrseaifah
5.0	Al salt
4.8	Maan District
3.6	Bani Kananh

Percentages%(Communication skills and General Kn	Education Directorates
25.6	Alqaser
23.3	AlJeezah
17.9	Alshowneh Aljanobia
17.8	Albadiah Aljanoobia
17.7	Amman district
16.8	Jarash
15.9	Altafeelah
15.6	Lewa Sahab
14.6	Bseerah
14.4	Deer Ala
14.4	Ajloon
13.8	Lewa Wadi Alsser
11.7	Lewa Alqweesmeh
11.5	Petra
10.6	Bani Obeed
10.0	Alaqhwar Alshmaliah
9.9	Lewa Aljameah
9.8	Alramtha
9.8	Alshoubak
9.6	Almazar Aljanobi
9.3	Alaghwar Aljanobiah
9.0	Albadia Alshmaliah
8.9	Maan district
8.5	UNRWA
8.5	Alzarqa Aloola
8.4	Almouqar
8.0	Alrsiafeh
8.0	Lewa Marka
7.6	Aqapa
7.6	Alkoorah
7.5	Almazar Alshmali
7.0	Alzarqa Althaniah
7.0	Bani Kananeh
6.6	Lewai Altiabeh Walw
5.8	Naoor
5.6	Defence Directorate
5.5	Albdiah Alshmaliah
5.2	Ain Albasha
4.9	Irbid district
4.2	Madapa
3.6	Alkarak district
3.3	Alsalt
3.3	Private Directoarte
3.0	Almafraq district
2.5	Theeban

B- levels of readiness according to the education directorate.

The analysis showed that the means scores on physical health domain for (24) directorates of education was higher than the national mean, as Ma'an district directorate of education, first Zarqa directorate of education, and Lewa Al-Jameah directorate of education occupied the first three ranks with percentages amounted to (7.8755), (7.8418), (7.7496) respectively. Whereas, Southern Shouna directorate of education was in the bottom of the list on this domain with mean (6.8705). With regard to social competencies domain, the number of educational directorates that have mean scores above the national mean was (27) educational directorates, where the means scores for Theban directorate of education , Na'oor directorate of education, and private directorate of education occupied the first three ranks with means (8,8077), (8.6330) , (8.5983), respectively. Whereas, the Al-Jeezza directorate of education ranked the last with mean (6.6101).

Moreover, for the emotional maturity domain, the number of directorates of education whose mean exceeded the national mean was (25) directorate of education, where Ain Al-Basha directorate of education, Al-Salt directorate of education, and Al-Jameah district directorate of education occupied the first ranks with means amounted to (8.2504), (8.2085), (8.0386), respectively. Whereas, Southern Shouna directorate of education located in the last rank with mean (6.0405).

For the linguistic development and general knowledge domain, the mean of (24) directorate of education was higher than the national mean, where the Theban directorate of education, private directorate of education, and Al-Mafraq directorate of education occupied the first three ranks with means (9.4835), (9.1758), (9.0907) respectively. And again, the mean of Al- Jeezza directorate of education was the lowest compared to the mean of other directorates of education, as it was amounted to (7.1909).

Finally, for the domain of communication skills and general knowledge, Theban directorate of education, Na'oor directorate of education, and Al-Salt directorate of education occupied the first three ranks with means (8.5938), (8.5444) and (8.4382) respectively. Also, Jeezza directorate of education ranked last with mean of (6.115).

Tables (20), (21), (22) show the children means according EDI's domains, and the Directorate of Education which the child's school is affiliated.

Table 20: Children's means scores on physical health domain and social competencies domain according to the Directorate of Education.

Directorate of Education	Rank	Social Competence (10-0)
Theban	1	8.8077
Na'or	2	8.633
Directorate of private education	3	.5 3
Alsalt	4	8.5901
Qasabah Almafraq	5	8.4411
Ain Albasha	6	8.3699
Al-Jam'a district	7	8.3196
The first zaraqa	8	8.1831
Alshoubak	9	8.1503
Qasabah Irbid	10	8.0946
Mouwaqar	11	.0943
Kasbah Ma'an	12	.064
UNRWA	13	8.0196
Northern western Badia	14	7.9 65
Bssaira	15	7.9851
Wadi al sair district	1	7.9701
Bani Qenana	17	7.9666
aqaba	18	7.9663
Bani obaid	1	7.9578
Madaba	20	7.9372
Petra	21	7.9298
Altaiba and Alwastieh district	22	7.8824
Rusaifah	23	7.8627
Northern mazar	24	7.8561
Second Zarqa	25	7.8516
Alqoura	6	7.8321
Marka district	27	7.8296
Jarash	28	7.7745

Directorate of Education	Rank	Physical health (10-0)
Kasbah Ma'an	1	7.875
The first zaraqa	2	7.8418
Al-Jam'a district	3	7.7496
Directorate of private education	4	7.6766
Ma'daba	5	7.6682
Qasabah Irbid	6	7.6637
Alsalt	7	7.6537
Alqoura	8	7.650
Ain Albasha	9	7.6482
Qasabh Amman	10	7.6471
Theban	11	7.6465
Qasabah Almafraq	2	7.6431
Northern western Badia	13	7.641
Northern Eastern Badia	14	7.6376
Bani Qanana	15	7.6361
Bani obaid	16	7.6085
Altaiba and Alwastieh district	17	7.6 5
Al aqaba	18	7.6025
Qasabah Al karak	19	7.5771
Mouwaqar	20	7.5589
Northern Aghwar	21	7.5284
Second Zarqa	22	7.528
Southern Badia	23	7.5202
Southern aghwar	24	7.489
Al shoubak	25	7.4835
Ajloun	26	7.4707
Ramrtha	27	7.463

Directorate of military culture	29	7.7519
Southern mazar	0	7.7294
Qwasimah district	31	7.6488
southern aghwar	32	7. 969
Dair alla	33	7.57 9
Al- Karak District	34	7.5022
tafialah	35	7.4766
Amman District	36	7.3525
Northern aghwar	37	7.3307
Northern Eastern Badia	38	7.2033
Ramtha	39	7.1639
Southern badia	40	7.161
Southern shouna	41	7.0862
Sahab district	42	6.926
Ajloun	43	6.76 3
Al Qaser	44	6.6 85
Jeezza	45	6.6101

Na'or	28	7.4576
Rusaifah	29	7 4486
Southern mazar	30	7.4461
Marka district	31	7.4398
Sahab district	32	7.4192
Northern mazar	33	7.4164
UNRWA	34	7.3813
Dair alla	5	7.3381
Qwasimah district	36	7.3219
tafialh	37	7.2923
Bssaira	38	7.2835
Perta	39	7.2725
Directorate of Military Culture	40	7.2473
Al Qader	41	7.23 1
Jarash	42	7.1782
Wadi al sair district	43	7.1024
Jeezza	44	6.9804
Southern Shouna	45	6.8705

Table 21: Children's mean scores on emotional maturity domain and linguistic and cognitive development domain according to the Directorate of Education

Directorate of Education	Rank	Language & Cognitive development (10-0)
Theban	**1**	**9.4835**
Directorate of Special Education	**2**	**9.1758**
Qasabah Al-Mafraq	**3**	**9.0907**
Al-Jam'a district	**4**	**9.0698**
Ain Al-Basha	**5**	**9.0642**
Qasabah Irbid		**8.8467**
Qasabah Al-Karak	**7**	**8.8299**
Salt	**8**	**8.7763**

Directorate of Education	Rank	Emotional Maturity (10-0)
Ain Al-Basha	**1**	**8.2504**
Salt	**2**	**8.2085**
Al-Jam'a district	**3**	**8.0386**
Tafileh	**4**	**7.9468**
Qasabh Ma'an	**5**	**7.9152**
Alqoura	**6**	**7.902**
Bani Qenana	**7**	**7.8884**
Directorate of Special Education	**8**	**7 8449**

Na'or	9	8.7532
First Zarqa	10	8.6862
Madaba	11	8.6491
Marka district	12	8.629
Northern mazar	13	8.6263
Northern Aghwar	14	8.6112
Altaiba andAlwastieh distric	15	8.5784
Alqoura	16	8. 479
Qasabah Ma'an	17	8.5382
Bani Qenana	18	8.5 28
Northern Western Badia	19	8.5005
Bani obaid	20	.4914
Rosaifeh	21	8. 215
Mouwaqar	22	8.41 3
UNRWA	23	8.4114
Al shoubak	24	8.3968
Petra	25	8.3751
Southern mazar	26	8.367
Second zarqa	27	8.3166
Wadi alsair district	28	8.309
aqaba	29	8.3063
Bssaira	30	8.2889
Southern badia	31	8.2005
ramtha	32	8.1 5
ajloun	33	8.1475
Directorate of Military Culture	34	8 04 3
Qwasimah district	35	8.0207
Jarash	36	8.01 1
tafialah	37	7.9844
Qasabah Amman	38	7.9457
Sahab district	39	7.9253
Southern aghwar	40	7.92 8
Dair alla	41	7.8961
Northern Eastern Badia	42	7.8469

Southern mazar	9	7.8282
The first Zarqa	10	7.82 2
Shobak	11	7.7978
Theban	12	7.7534
Naour	13	7.7337
Qasabah Irbid	14	7.6905
Ramtha	5	7.6511
The second Zarqa	16	7.6247
Deir Ala	17	7.5788
Rsaifeh	18	7.56 1
Northern Badia	19	7.5482
Qasabh Amman	20	7.5092
Madaba	21	7.5085
UNRWA	22	7.4846
Mouwaqar	23	7.4686
Wadi alsair district	24	7.4678
Northern Aghwar	25	.4637
Qasabh Al Mafraq	26	7.4457
Southern Aghwar	27	7.4429
North West Badia	28	7.4396
Northern mazar	29	7.422
Marka district	30	7.3748
Bani obaid	31	7.3242
Bssaira	32	.2879
Petra	33	7.263
Altaiba and Alwastieh district	34	7.2501
Southern Badia	35	7.235
Jeezza	36	7.1984
Jerash	37	7.0835
The Qweismeh district	38	7.0745

Al Qaser	43	7.4781
Southern shouna	44	7.3196
Jeezza	45	7.1909

Ajloun	39	6.9 75
Aqaba	40	6.8789
Qsabah Al-Karak	41	6.8655
Sahab district	42	6.8192
Al Qaser	43	6 8014
Directorate of Military Culture	44	6.6308
South Shouna	45	6.0405

Table 22: the means of the children scores on communication skills and general knowledge domain according to the Directorate of Education.

Directorate of Education	Rank	Communication skills & General knowledge (10-0)
Theban	1	8.5938
Na'or	2	8.5444
Salt	3	8.4382
Directorate of private education	4	8.392
Qasabah AlMafraq	5	8.1564
UNRWA	6	7.8154
Ain Al-Basha	7	7.8019
First Zarqa	8	7.7982
madaba	9	7.7648
Al-Jam'a district	10	7.7031
Qasabah Ma'an	11	7.6974
Qasabah Irbid	12	7.6721
Northern mazar	13	7.6174
Second Zarqa	14	7.5365
Alqoura	15	7.4775
alshoubak	16	7.4576
Marka district	17	7.4313
Altaiba and Alwastieh district	18	7.4088
Aqaba	19	7.4077
Rosaifeh	20	7.4044
Northern western badia	21	7.3706
mouwaqar	22	7.3484
Southern mazar	23	7.3315

Wadi alsair district	**24**	**7.3296**
Qwasimah district	**25**	**7.2696**
Bani Qenana	**26**	**7.2627**
Qasabah Al-Karak	**27**	**7.2553**
Directorate of military culture	**28**	**7.2221**
Bani obaid	**29**	**7.1907**
Northren aghwar	**30**	**7.1349**
Petra	**31**	**7.1121**
Jarash	**32**	**7.0645**
Southren aghwar	**33**	**7.0511**
Dair alla	**34**	**6.9348**
Northern eastern badia	**35**	**6.9241**
Tafailah	**36**	**6.8516**
Ajloun	**37**	**6.8247**
Qasabah Amman	**38**	**6.6811**
Sahab district	**39**	**6.6695**
Southern Badia	**40**	**6.6059**
Bssaira	**41**	**6.5458**
Ramtha	**42**	**6.5041**
Southern shouna	**43**	**6.5035**
Al Qaser	**44**	**6.2317**
Jeezza	**45**	**6.115**

It was revealed that eight directorates of education had children means below the national mean for all EDI's domains; these directorates are Ajloun, Sahab, Qweismeh, defense directorate of education, AlQasr, Jerash, Jeezza and the southern Shouna. Whereas, the number of directorates which had children means above national mean for all EDI's domains was (11) directorate of education, and these directorate are: Ma'an, first Zarqa , Al jam'a, private directorate of education, Madaba, Qasbat Irbid, Qasbah al-Salt, Al-Qourat, Ain Al-Basha, Theban,Al-Mowaqar. Table (23) shows the domains where the mean of the directorate of education exceeds the national mean.

Table 23:Domains that have means above or below the national mean according to the directorate of education.

Directorates	Physical health	Social Competence	Emotional Maturity	Language & Cognitive development	Communication skills & General knowledge
Qasbah Ma'an	√	√	√	√	√
first Zarqa	√	√	√	√	√
Al Jam'a district	√	√	√	√	√
Directorate of Special Education	√	√	√	√	√
Madaba	√	√	√	√	√
Kasbah Irbid	√	√	√	√	√
Salt	√	√	√	√	√
Al-Qourah	√	√	√	√	√
Ain Al-Basha	√	√	√	√	√
Qasabh Amman	√	X	√	X	X
Theban	√	√	√	√	√
Qasabh Almafraq	X	X	√	X	X
Northen West Badia	√	√	X	√	√
Northern East Badia	√	X	√	X	X
Bani Qanana	√	√	√	√	X
Bani obaid	√	√	X	√	X
Altaiba and Alwastieh district	√	√	X	√	√
Aqaba	√	√	X	X	√
Ksabah Karak	√	X	X	√	X
Mouwaqar	√	√	√	√	√
Northern Aghwar	√	X	√	√	X
Second Zarqa	√	√	√	X	√
Southern Badia	√	X	X	X	X
Southern Aghwar	√	X	X	X	X
Shobak	X	√	√	√	√
Ajloun	X	X	X	X	X
Ramtha	X	X	√	X	X
Naour	X	√	√	√	√
Rsaifeh	X	√	√	√	√
Southern Mazar	X	X	√	X	√
Marka district	X	√	X	√	√

Directorates	Physical health	Social Competence	Emotional Maturity	Language & Cognitive development	Communication skills & General knowledge
Sahab district	**X**	**X**	**X**	**X**	**X**
Northern Mazar	**X**	√	**X**	√	√
UNRWA	**X**	√	√	√	√
Deir Ala	**X**	**X**	√	**X**	**X**
Qweismeh district	**X**	**X**	**X**	**X**	**X**
Tafileh	**X**	**X**	√	**X**	**X**
Bssaira	**X**	√	**X**	**X**	**X**
Petra	**X**	√	**X**	**X**	**X**
Directorate of Military Culture	**X**	**X**	**X**	**X**	**X**
Al-Qasser	**X**	**X**	**X**	**X**	**X**
Jerash	**X**	**X**	**X**	**X**	**X**
Wadi alsair district	**X**	√	√	**X**	√
Jeezza	**X**	**X**	**X**	**X**	**X**
South Shouna	**X**	**X**	**X**	**X**	**X**

sign (√)) means that the mean for the domain exceeds the national mean

Results related to the fifth question: "**Is there a statistically significant correlation at the level of significance (α = 0.05) between readiness to learn and the child's gender, school's location, child's enrollment in the KG, father's education, mother's education, family size, parent practices with child, and child behaviors at home?"**

Pearson correlation coefficient was calculated between pairs of different variables. Table (24) shows the amount of correlation coefficient, the direction of the correlation relationship and the statistical significance of the correlation coefficients.

Table 24: Correlation coefficients between EDI's Domains and the independent variables

		Child's gender	School's location	KGs enrollment	father's education	Mother's education	Family income	Family size	parents' practices with the child	child's behaviors
Physical health	Correlation Coefficient	0.037**	.063**	0.122**	0.156**	0.165**	0.123**	-0.060**	0.170**	0.147**
	Statistical significance level	.005	.000	.000	.000	.000	.000	.000	.000	.000
	Sample size	5705	5705	5402	5605	5635	5563	5597	4706	5458
Social Competence	Correlation Coefficient	0.121**	.091**	0.144**	0.230**	0.234**	0.203**	-0.094**	0.201**	0.252**
	Statistical significance level	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Sample size	5966	5966	5657	5864	5893	5821	5855	4928	5710
Emotional maturity	Correlation Coefficient	0.195**	.029*	0.048**	0.118**	0.126**	0.094**	-0.037**	0.148**	0.112**
	Statistical significance level	.000	.024	.000	.000	.000	.000	.005	.000	.000
	Sample size	5848	5848	5549	5745	5775	5703	5738	4837	5593
Language & Cognitive development	Correlation Coefficient	0.069**	.087**	0.170**	0.271**	0.285**	0.223**	-0.102**	0.242**	0.272**
	Statistical significance level	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Sample size	5964	5964	5653	5860	5890	5818	5853	4921	5708
Communication skills & General knowledge	Correlation Coefficient	0.090**	.089**	0.172**	0.249**	0.254**	0.211**	-0.100**	0.201**	0.265**
	Statistical significance level	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Sample size	5993	5993	5681	5889	5919	5845	5882	4947	5732

****Significant at (α = 0.05) * Significant at (α = 0.01)**

It is revealed from Table (24) the following:

- There is a statistical significant correlation between child's gender and each of the EDI's domains, where the highest correlation coefficient was with the emotional maturity domain, as the correlation coefficient reached (0.19). The correlation coefficients indicate that the child's score increases on all domains if the child is female. However, it was observed that the correlation coefficients were weak.

- There is a weak significant statistical correlation between the school's location and each of the EDI's domains. The child's score increases on all dimensions if the child lives in urban.
- There is a statistical significant correlation between the child enrollment in KG and each of the EDI's domains, where the highest correlation coefficient was with the communication skills and general knowledge domain, where the correlation coefficient reached to (0.172). The correlation coefficients indicate that the child's score increases on all domains if the child is enrolled in KG.
- There is a statistical correlation between father's education and each of the EDI's domains, where the highest correlation coefficient was with the domain of linguistic and cognitive development, as the coefficient of correlation amounted to (0.271), and the child's score increases as the father's education increases.
- There is a statistical significant correlation between mother's education and each of the EDI's domains, where the highest correlation coefficient was with the linguistic and cognitive development domain, as the child's score increases as the mothers' educational level increases.
-- There is a statistical significant correlation between family income and each of the EDI's domains, where the highest correlation coefficient was with the linguistic and cognitive development domain, as the correlation coefficient reached to (0.223). This indicates that the child's score increases on the EDI's domains as the family income increases.
- There is a statistical significant correlation between the family size and each of the EDI's domains , where the highest correlation coefficient was with linguistic and cognitive development domain, as the correlation coefficient reached to (-0.102), where

the correlation coefficients refer to lower children scores with an increase in the family size.

- There is a statistical significant correlation between the parents' practices with the child and each of the EDI's domains, as the highest correlation coefficient was with the linguistic and cognitive development domain. The correlation coefficient was (0.242). The correlation coefficients indicate that the child score on the EDI's domains increases as the score on the "CCI- parent's practice with child tool" increases (positive practice of parents with children).
- There is a statistically significant correlation between the child's behaviors and each of the EDI's domains, where the highest correlation coefficient was with the linguistic and cognitive development domain, as the correlation coefficient amounted to (20.27). The correlation coefficients indicate that the child's score on the EDI's domains increases as the score on the "CCI- child behaviors at home tool" increases.

Results related to the sixth question:" What is the common effect of several independent variables on the level of readiness for learning among children according to domain?"

-Levels of readiness according to the child's gender by location

In order to identify the gap in the level of readiness to learn between males and females when controlling over the school's location, the mean scores of children in all domains were calculated according to gender and location. Table 25 shows the mean scores of children according to gender and location.

Table 25: The mean scores of children in all EDI's domains according to gender and location.

Gender	Location		Physical health	Social Competence	Emotional Maturity	Language & Cognitive development	Communication skills & General knowledge
Male	Rural	N	1252	1317	1289	1319	1328
		The mean	7.4119	7.3791	7.0121	8.0327	6.8596
	Urban	N	1711	1790	1761	1787	1795
		The mean	7.5457	7.8133	7.2525	8.5467	7.4582
Female	Rural	N	1151	1192	1167	1193	1198
		The mean	7.5080	7.9455	7.8898	8.4907	7.4824
	Urban	N	1591	1667	1631	1665	1672
		The mean	7.5791	8.2582	7.8473	8.7194	7.8124

In addition to that, the data in the table were graphically represented (Figure. 3 and Figure 4). Where the data revealed the following:

1. The performance of urban's males was higher than that of rural males on all EDI's domains.
2. The highest difference between males by location was on communication skills and general knowledge domain, and it was for the favor of urban's males, followed by the difference on linguistic and cognitive development.
3. The performance of urban females was higher than the performance of rural females in all EDI's domains except for the emotional maturity domain.
4. The highest differences between females by location were on the communication skills and general knowledge domain, and it was for the favor of urban's females.

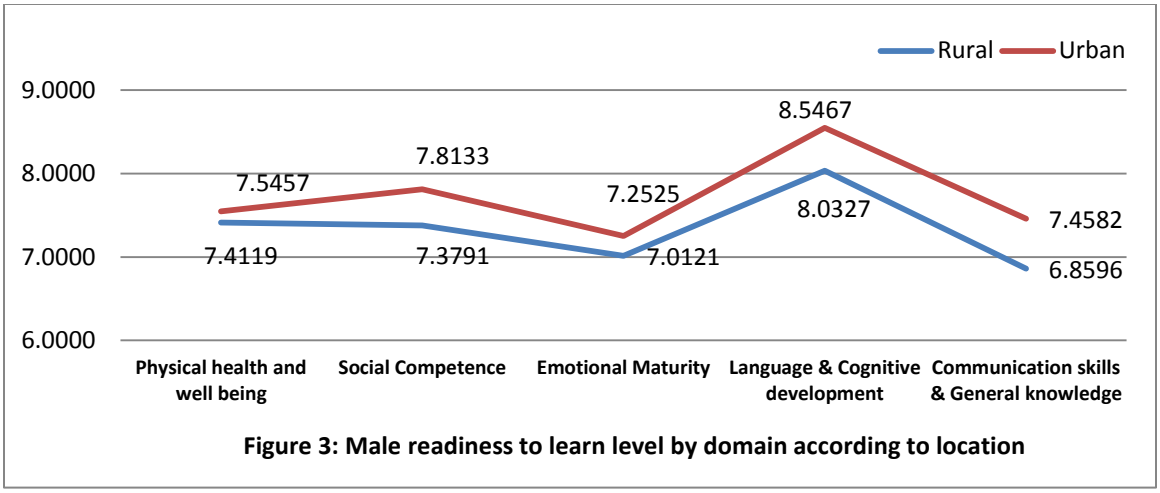


Figure 3: Male readiness to learn level by domain according to location

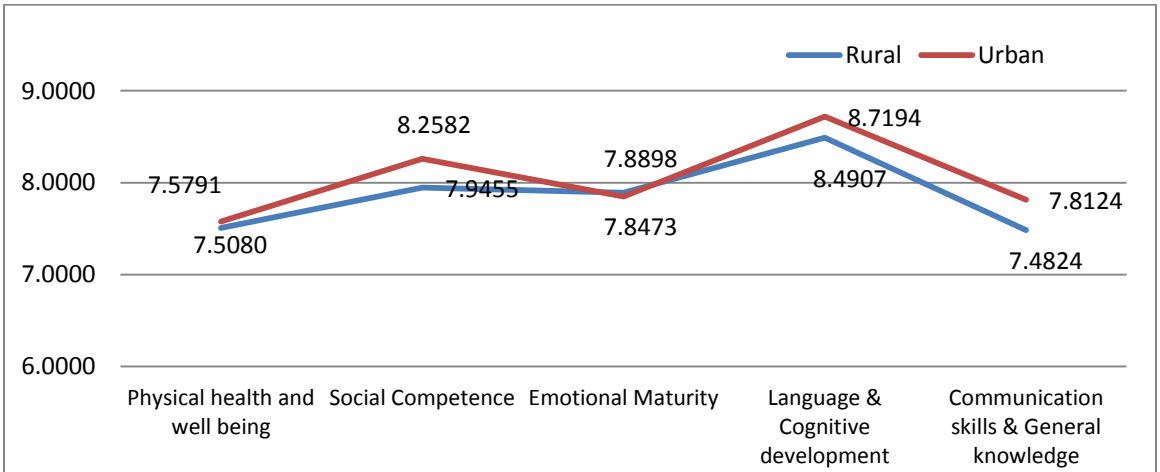


Figure 4: Female readiness to learn level by domain according to location

-Levels of readiness to learn according to the child's gender by enrollment in KG

The means of children's scores were calculated on all EDI's domains by gender and according to enrollment in the KG, in order to identify the changes in the means scores according to child's gender when adjusting to enrollment in KG. Table 26 shows these means.

Table 26: Mean children's scores in all domains of early childhood development by gender and according to enrollment in KG.

Gender	Enrollment to KG		Physical health	Social Competence	Emotional Maturity	Language & Cognitive development	Communication skills & General knowledge
Males	**Not enrolled**	**N**	786	836	819	835	841
		The mean		7.2704	6.9988	7.8186	6.6346
	Enrolled	**N**	2015	2107	2070	2106	2116
		The mean		7.7787	7.2063	8.5561	7.4489
Females	**Not enrolled**	**N**	822	866	848	864	867
		The mean		7.5749	7.7009	8.0361	6.8798
	Enrolled	**N**	1779	1848	1812	1848	1857
		The mean		8.4003	7.9397	8.9102	8.0668

In addition to that, the data in the table were graphically represented (Figure. 5 and Figure 6). From these data, it is noted that:

1- The performance of males enrolled in KGs was higher than that of males who did not enrolled in KG, in all domains of early childhood development
2- The highest difference between males according to enrollment in KG was on the communication skills and general knowledge domain, and language and cognitive development domain for the favor of males who enrolled to KG.
3- The performance of females who were enrolled to KG was higher than that of females who did not enroll in KG, in all EDI's domains.
4- The highest differences between females according to enrollment in KG was on the communication skills and general knowledge domain, and it was for the advantage of females who were enrolled in KG

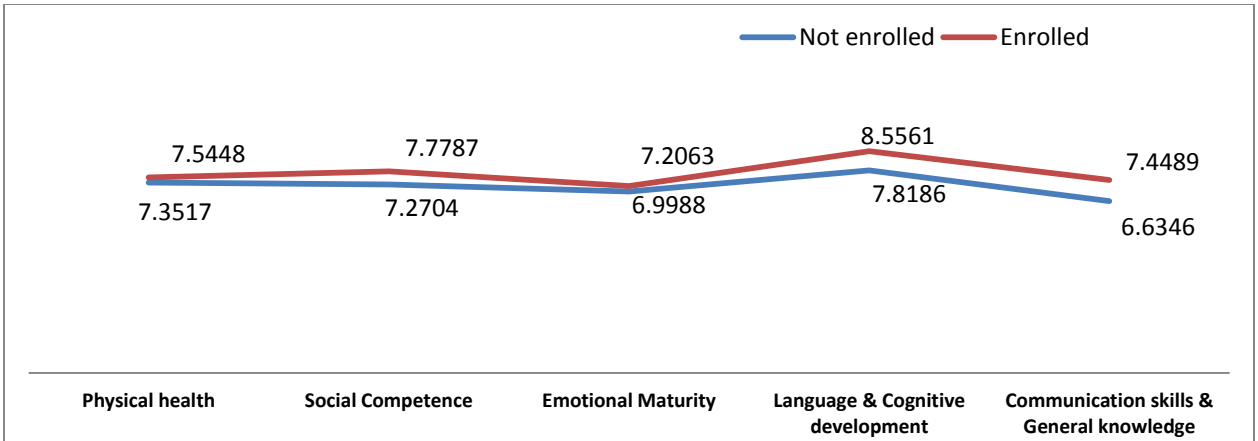


Figure 5. Male readiness to learn level by domain according to kindergarten enrolment

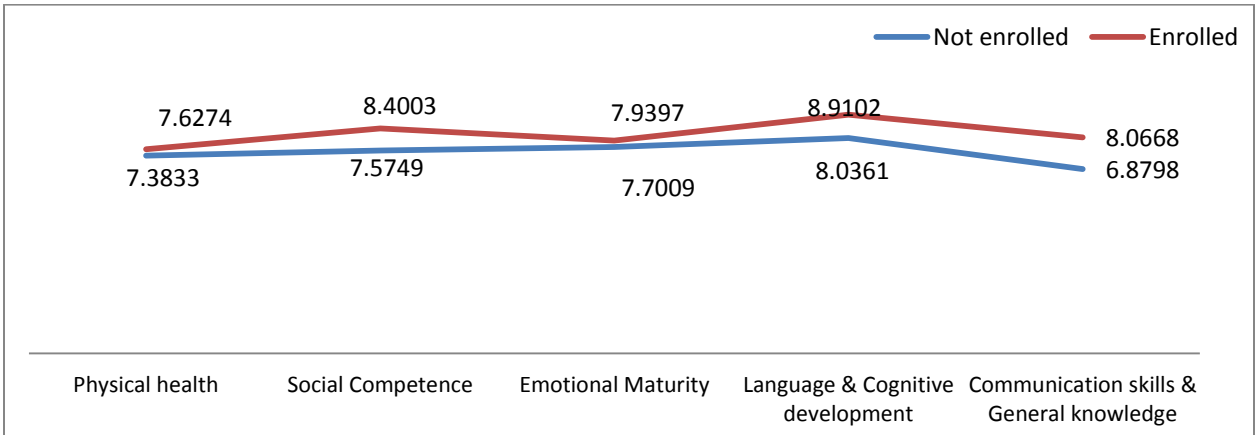


Figure 6. Female readiness to learn level by domain according to kindergarten enrolment

- Levels of readiness according to child's gender by KG's type.

In order to identify the gap in the level of readiness to learn between males and females when adjusting the KG type, the mean scores of children in all domains were calculated according to gender and according to the type of KG. Table (27) shows the mean scores by gender and according to the type of KG.

Table 27:Mean scores of children in all EDI's domains by gender and by type of KG.

Gender	Type of KG		Physical health	Social Competence	Emotional Maturity	Language & Cognitive development	Communication skills & General knowledge
Males	**Public**	**Number of children**	549	577	568	578	581
		The Mean	7.4525	7.4462	7.0363	8.1633	7.0299
	Private	**Number of children**	1480	1542	1512	1538	1548
		The Mean	7.5863	7.8989	7.2775	8.6920	7.5719
Females	**Public**	**Number of children**	483	500	490	501	502
		The Mean	7.5302	8.0977	7.7982	8.4183	7.5767
	Private	**Number of children**	1319	1364	1339	1365	1372
		The Mean	7.6636	8.4886	8.0253	9.0824	8.2176

The data shown in Table (27) are graphically represented as shown in (Figures 7 and 8). It is noted through these figures the following:

1- The mean scores of children who was enrolled in private KGs is higher than the means scores of children enrolled in public KGs regardless of the gender of the child.

2- The gap between the mean scores of children enrolled in private KGs and children enrolled in public KGs on the communication skills and general knowledge domain and the linguistic and cognitive development domain was the highest regardless of the child's gender, although the gap was greater among males.

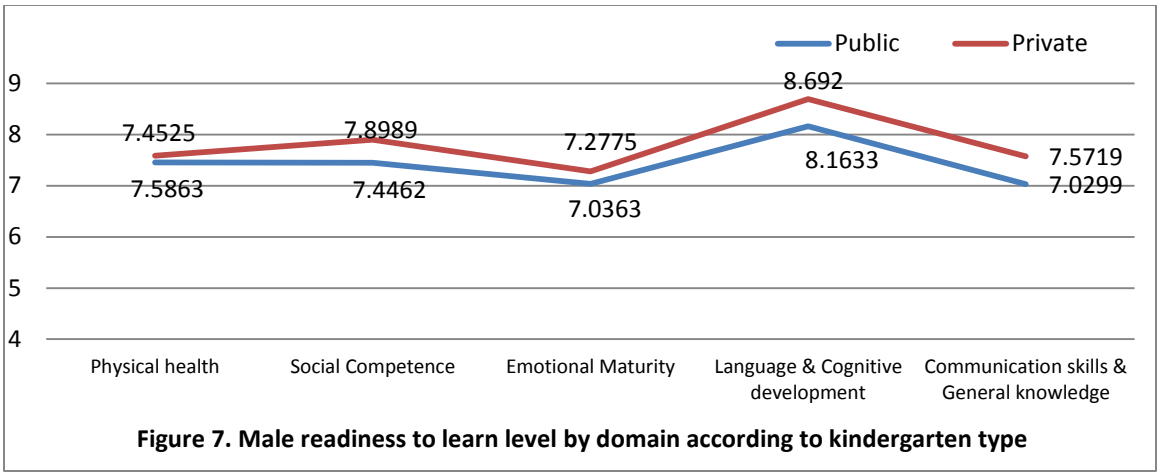


Figure 7. Male readiness to learn level by domain according to kindergarten type

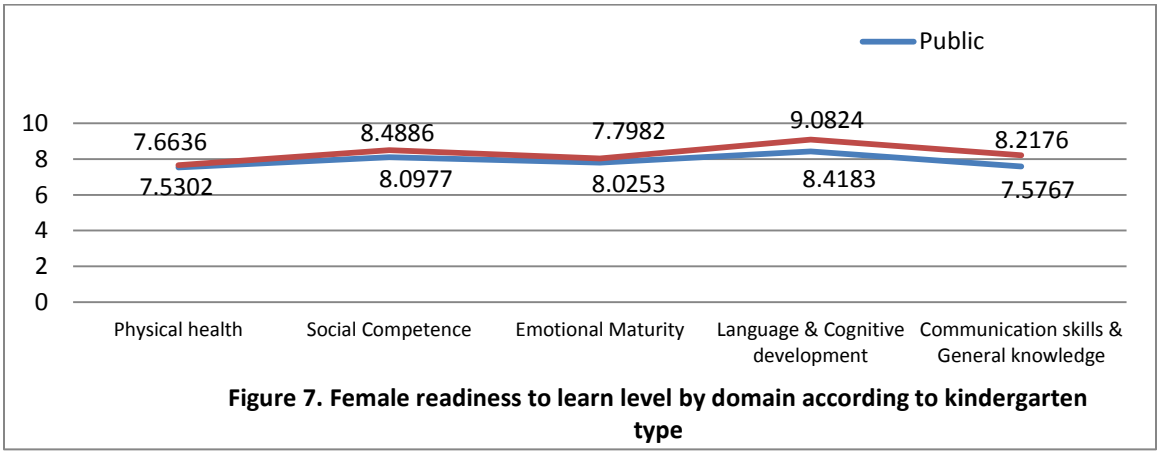


Figure 7. Female readiness to learn level by domain according to kindergarten type

Results related to the seventh question:" What is the ability of the following variables: child's gender, school's location, enrollment of the child in the KG, father's education, mother's education, family income, family size, practices of the parents with the child, and the child's behaviors at home, on classifying children to (vulnerable, invulnerable) ? "

In order to answer this question, a discriminant analysis،[20] was performed where the variable of the non- readiness to learn (Vulnerable) represents the dependent variable, as This variable is a dichotomous variable, where (the number "1" indicates non-readiness, the number "0" indicates child is ready to learn). The variables entered into the model are: child's gender, location, KG enrollment, father's education, mother's education, family income, family size, practices of the parents with the child and the child behaviors at home.

The results of the predictive classification of children's membership in both groups (ready, not ready) showed that (94.8%) of children who are ready to learn classified correctly, and 17.6% of children who are not ready to learn classified correctly, based on the variables that entered the predictive model.

In general, 72.3% of children were classified correctly. Table (28) shows the results of the predictive classification.

Table 28:results of predictive classification of children according to the variables entered into the discriminatory analysis.

Classification result					
		Original Classification	**Predicted**		**Total**
			Ready	Not ready	
The original group	**Frequency**	Ready	3075	167	3242
		Not ready	1102	236	1338
	Percentage	Ready	94.8	5.2	100.0
		Not ready	82.4	17.6	100.0
(72.3%) of the cases that predicted by the model were performed correctly					

[20]The Wilkes Lambda test value was (0.936) and was statistically significant at($\alpha = 0.05$), which means that the predictive model explains the child's membership (ready, not ready) in accepted way according to the variables entered in the model

Results related to the eighth question:" What is the relative importance of the following variables: child's gender, school's location, the enrollment of the child in the KG, father's education, mother's education, family income, family size, the practices of the parents with the child and the child's behaviors at home in predicting child's readiness to learn according to EDI's domains?"

To answer this question, stepwise regression analysis was performed, where the dependent variable is the child's scores on the EDI's domains. Therefore, five regression equations were formed. Whereas, the independent variables are the child's gender, school's location, KG enrollment, father's education, mother's education, family income, family size, parents' practices with the child and child behaviors at home.

The results of the analysis will be introduced according to EDI's domains:

A-Physical health domain

The results of the regression analysis of children's physical health scores on the independent variables which were mentioned, showed that the multiple correlation coefficient between the dependent variable and the independent variables were (0.233), However, the explanatory power of the model, which the results indicated that, it was significance in interpretation of the scores' variations in this domain, was weak, as the determination coefficient amounted to (0.054). This means that the independent variables whose relative importance in the predictive model is statistically significant only explain (5.4%) of the variance of the children's scores in this domain, which means that there are other factors that explain the remaining percentage of the total variance.

Based on the results of the analysis, the step-wise multiple regression kept the following variables in the model: parent's practice with the child, mother's education, KG enrollment, child behaviors at home, father's education, child's gender and school location. Whereas, the variables: family size and family income were excluded from the model. The most important variables, as reflected by regression coefficient, were the variable of KG enrollment, followed by the variable mother's education.

The following points are a brief description of the regression analysis results:

♦ The predictive ability of the variables entered into the model - that is, the prediction of the child's score on the physical health domain through the above mentioned variables -

was weak. This means that there are other variables for which information has not been collected and therefore not included in the model; these variables may be related to the pattern of family upbringing, awareness programs received by the caregiver, the type of food routinely eaten by the child, etc.

♦ Despite the weakness of the variables above, it was found that the variables of parental practice with the child, mother's education, KG enrollment, child behaviors at home, father's education, child's gender, and location were statistically significant variables in predicting the child's score on physical health domain.

♦The results indicated that among the above mentioned variables that were statistically significant in predicting the child's score in this domain, the variable of mother's education and the variable of KG enrollment were the most important in predicting the child's score in this domain.

♦Family size and family income were not statistically significant in predicting the child's score on physical health domain.

Table (29) shows the final results of the regression equation of the physical health scores on the independent variables were mentioned above.

.

Table 29 :Results of multiple regression analysis of physical health domain on independent variables.

The method		The variables	Multiple correlation Coefficient R	Determination Coefficient R^2	F	Sig.	Unstandardized ß	Standard error	Standardized ß	T	Sig.	Part correlation
Stepwise	The final model	Regression coefficient	5.794									
		Parents practice	0.233	0.054	34.049	0.00	0.021	0.002	0.142	9.127	0.00	0.140
		Mother's education level					0.098	0.028	0.061	3.489	0.00	0.054
		Enrollment At KG					0.134	0.028	0.077	4.833	0.00	0.075
		child behaviors at home					0.013	0.005	.044	2.469	0.014	0.038
		Father's education level					0.069	0.030	0.040	2.300	0.022	0.036
		Child's gender					0.051	.024	0.032	2.12	0.034	0.032
		Child housing location					0.049	0.025	0.030	1.970	0.049	0.031

B-Social Competencies

The results of the regression analysis of children's scores in social competencies domain on the independent variables that we mentioned, revealed that the correlation coefficient between the dependent variable and the independent variables was (0.346). However, the explanatory power of the model, which the results indicated that, it was significance in interpreting the variation, was good compared with the physical health domain, as reflected by the value of the determination coefficient (0.12), and this means that the independent variables whose relative importance in the predictive model were statistically significant accounted for (12%) of the total variance of the children's scores in this domain, which means that there are other factors explain the remaining percentage of the total variance.

Based on the step-wise multiple regression analysis, it was revealed that the following variables were kept in the model: child behaviors at home, parent-child practices, mother's education, KG enrollment, school's location, child's gender, father's education. Whereas, family size, and family income were excluded from the model. The most significant variables as reflected by the amount of regression coefficient were the child's gender, followed by mother's education. Table (30) shows the final results of the regression equation of children scores on the independent variables.

The following points are a brief description of the regression analysis results:

♦ The predictive ability of the variables entered into the model - i.e., the prediction of the child's score on the social competencies domain by the independent variables mentioned above – as expressed by the determination coefficient was 12%. This means that(12%) of the variations in children's scores on this domain are due to variations in these variables, and according to the analysis, (88%) of the variations in the children scores in social competencies domain are due to other factors.

♦ It appears that the variables that have been entered into this model have a predictive ability to predict children's scores better than it is predictive ability on the physical health domain.

♦ It was found that child behaviors at home, practices of parents with the child, mother's education, KG enrollment , father's education, child's gender, and location were the

variables that have statistical significance in predicting the child's score on social competencies domain.

♦ The results indicated that among the above mentioned variables , which were statistically significant in predicting the child's score in this domain, the mother's education and child's gender were the most important variables in predicting the child's score in this domain

♦ The family size and the family income were not statistically significant in predicting the child's score on social competencies domain.

Table 30: Results of multiple regression analysis of social competencies domain on independent variables

The method		The variables	Multiple correlation Coefficient R	Determination Coefficient R^2	F	Sig.	Unstandardized ß	Standard error	Standardized ß	T	Sig.	Part correlation
Stepwise	The final model	Regression coefficient	2.616									
		child behaviors at home	0.346	0.120	84.971	0.00	0.105	0.013	0.134	7.942	0.00	0.113
		Practice parents with child					0.056	0.006	0.150	10.149	0.00	0.144
		Mother education level					0.328	0.068	0.079	4.816	0.00	0.068
		Admission to KG					0.303	0.067	0.067	4.501	0.00	0.064
		Child housing site					0.256	0.060	0.061	4.247	0.00	0.060
		gender of the Child					0.494	0.058	0.120	8.452	0.00	0..120
		Level of education of the Father					0.246	0.073	0.055	3.360	0.00	0.048

C-Emotional Maturity domain

The results of regression analysis for children's scores in emotional maturity domain on the independent variables showed that the multiple correlation coefficients between the dependent variable (emotional maturity scores) and the independent variables were (0.253). However, the explanatory power of the model- which the results indicated that it is statistically significance in predicting the children's scores- as reflected by the value of the determination coefficient (0.064), is weak, this means that the independent variables whose relative importance in the predictive model were statistically significant,

interpreted about(6.4%) of the total variance of children's scores, which means that there are other factors that explain the remaining percentage of the total variance.

Based on the results of the analysis, the step-wise multiple regression kept the following variables in the model: the child's gender, practices of the parents with the child, child behaviors at home and mother's education, while family size, family income, father's education, location, and KG enrollment were excluded from the model. It was noted that, the most important variables, as reflected by the regression coefficients, were the child's gender followed by mother's education. Table (31) shows the final regression equation for children's scores the emotional maturity domain on the independent variables.

The following is a brief description of the regression analysis results:

♦ The predictive ability of the variables entered into the model - that is, the prediction of the child's score on the emotional maturity domain by the above variables – as it is expressed by the determination coefficient which is amounted to (6.4%), and this means that (6.4%) of the variations in children's scores on this domain are due to the variations in those variables. Indeed, according to the results of this analysis, (93.6%) of the variations in children's scores on the emotional maturity scores are due to other factors.

♦ It appeared that child's gender , parents practices with the child, child behaviors at home and mother's education were statistically significant variables in predicting the child's score on the emotional maturity domain.

♦ The results indicated that among the above mentioned variables, which were statistically significant in predicting the child's score in this domain , the mother's education, child's gender were the most important variables in predicting the child's score in this domain.

♦ The family size, family income, father's education, location, and KG enrollment were not statistically significant in predicting the child's score in the emotional maturity domain.

Table 31: Results of multiple regression analysis of emotional maturity domain on the independent variables.

Method		The variables	Multiple Correlation Coefficient R	Determination Coefficient R^2	F	Sig.	Unstandardized ß	Standard error	Standardized ß	T	Sig.	Part correlation
Stepwise	The final model	Regression coefficient	3.855									
		gender of the Child	0.253	0.064	73.307	0.00	0.693	0.055	0.188	12.711	0.00	0.189
		Parents practice with the child					0.045	0.005	0.133	8.718	0.00	0.144
		child behaviors at home					0.031	0.012	0.044	2.698	0.007	0.040
		Mother's education level					0.153	0.060	0.041	2.551	0.011	0.038

D- Language & Cognitive development

The regression analysis results of children's scores on linguistic and cognitive development domain on independent variables showed that the correlation coefficient between the dependent variable (linguistic and cognitive development scores) and the independent variables was (0.376). However, the explanatory power of the model- which the results indicated that it is significant in predicting the child's score in this domain- as reflected by the value of the determination coefficient was (0.141), which reflects an appropriate ability of the independent variables to predict the dependent variable. This means that the independent variables whose relative importance in the predictive model is statistically significant accounted for (14.1%) of the variation of children's scores in this domain.

Based on the analysis, the step-wise multiple regression kept the following variables in the model: child behaviors at home, parent's practices with the child, mother's education, KG enrollment, child's gender, father's education, school's location. Whereas, family size, and family income variables were excluded from the model. However, the most important variable, as reflected by the regression coefficients was mother's education, followed by KG enrollment variable.

The following is a brief description of the regression analysis results:

♦ The predictive ability of the variables entered into the model –i.e. predicting the child's score on the linguistic and cognitive development domain by the above mentioned variables - as expressed by the determination coefficient was (14.1%). This means that (14.1%) of the variations in children's scores on this domain are due to variations in those variables. It is worthy to mention that, according to the results of this analysis (85.9%) of the variations in the children scores in the linguistic and cognitive development domain are due to other factors.

♦ It was found that the independent variables for which information was collected in this survey which are: child's gender, school's location, child's enrollment in KG, father's education, mother's education, family income, family size, practices of parents with the child, and the child behaviors at home have the ability to predict children's scores in linguistic and cognitive development domain greater than their ability to predict the score of children in other domains.

♦ It was found that child behaviors at home, father's education, practices of the parents with the child, location, mother's education, KG enrollment and the child's gender were statistically significant in predicting the child's score on the linguistic and cognitive development domain.

♦ The results indicated that among the above mentioned variables that were statistically significant in predicting the child's score in this domain, mother's education and enrollment in KG were the most important variables in predicting the child's score in this domain.

♦ Family size and family income were not statistically significant in predicting the child's score on linguistic and cognitive development domain.

Table (32) shows the results of the regression equation of children scores on the linguistic and cognitive development domain on independent variables.

Table 32:Results of the multiple regression analysis of the linguistic and cognitive development domain on the independent variables.

Method		The variables	Multiple Correlation Coefficient R	Determination Coefficient R^2	F	Sig.	Unstandardized ß	Standard error	Standardized ß	T	Sig.	Part correlation
Stepwise	Final model	Regression coefficient	1.927									
		child behaviors at home	0.376	0.141	102.351	0.00	0.109	0.013	0.136	8.159	0.00	0.115
		Practice parents with child					0.077	0.006	0.197	13.549	0.00	0.190
		Mother education level					0.421	0.069	0.099	6.099	0.00	0.086
		KG enrollment					0.349	0.068	0.076	5.128	0.00	0.072
		Child gender					0.249	0.059	0.059	4.209	0.00	0.059
		father education level					0.262	0.074	0.057	3.540	0.00	0.050
		Child house location					0.215	0.061	0.050	3.520	0.00	0.049

E-Communication skills & General knowledge

The regression analysis results of children's scores in communication skills and general knowledge domain on the independent variables showed that the correlation coefficient between the dependent variable (communication skills and general knowledge score) and the independent variables was (0.352).The explanatory power of the model- which the results indicate it is statistically significance in predicting children's scores in this domain- as reflected by the value of the determination coefficient which was amounted to (0.124), where it reflects an appropriate ability of the independent variables to predict the dependent variable. This means that the independent variables whose relative importance in the predictive model were statistically significant accounted for (12.4%) of the variations of children scores in this domain.

Based on the results of the analysis, the step-wise multiple regression kept the following variables in the model: child behaviors at home, parent's practices with the child, mother's education, KG enrollment, child's gender, father's education and school's location. While family size, and family income were excluded from the model. Moreover, the results indicated that, the most important variables, as reflected by the regression coefficients, were KG enrollment, followed by the child's gender.

The following is a brief description of the regression analysis results:

♦ The predictive ability of the variables entered into the model - predicting the child's score on the communication skills and general knowledge domain by the above mentioned variables - as expressed by the determination coefficient which was amounted to (12.4%), as this means that (12.4%) of the variations in children's scores on this domain are due to the variations in those variables. So as, according to the results of this analysis, (87.6%) of the variations in children's scores in communication skills and general knowledge domain are due to other factors.

♦ It was found that child behaviors at home, parent's practices with the child, mother's education, KG enrollment, child's gender, father's education, and location are statistically significant predictive variables of the child's score on the communication skills and general knowledge domain.

♦ The results indicated that among the above mentioned variables, which were statistically significant in predicting the child's scores in this domain, the child's gender, KG enrollment were the most important variables in predicting the child's score in this domain.

♦The family size and family income were not statistically significant in predicting the child's score on communication skills and general knowledge domain.

Table (33) shows the results of the final regression equation for children's scores on the communication skills and general knowledge domain on the independent variables

Table 33:Results of the multiple regression analysis for the communication skills and general knowledge domain on the independent variables.

Method		The variables	Multiple Correlation Coefficient R	Determination Coefficient R^2	F	Sig.	Unstandardized ß	Standard error	Standardized ß	T	Sig.	Part correlation
Progressive input	Final model	Regression coefficient	0.850									
		child behaviors at home	0.352	0.124	88.644	0.00	0.143	0.017	0.145	8.635	0.00	0.122
		Practice parents with child					0.070	0.007	0.148	10.034	0.00	0.142
		Mother's education level					0.437	0.086	0.083	5.086	0.00	0.072
		gender of the Child					0.454	0.074	0.088	6.173	0.00	0.087
		KG enrollment					0.490	0.085	0.086	5.786	0.00	0.082
		Father's education level					0.319	0.092	0.056	3.470	0.00	0.049
		Child house location					0.263	0.076	0.050	3.463	0.00	0.049

Results related to the ninth question: "**Is there a change in the level of readiness to learn during the period (2010-2018), and in which domains?"**

To answer this question, the percentages of children who are not ready to learn on one domain or more EDI's domains for the year 2010 (base-line year) and the years 2014 and 2018 were first calculated.

In the second part, the changes in the percentages of children who are not ready to learn by the five domains were monitored for the years 2010, 2014 and 2018. Finally, the children's averages were calculated according to the EDI's domains for the years 2010, 2014, 2018

First: Changes on the percentages of children who are not ready to learn

The chart below shows that the percentage of children who are not ready on one domain or more EDI's domains has increased from 27% of total children in 2010 and 2014 to [21](%30)in 2018.

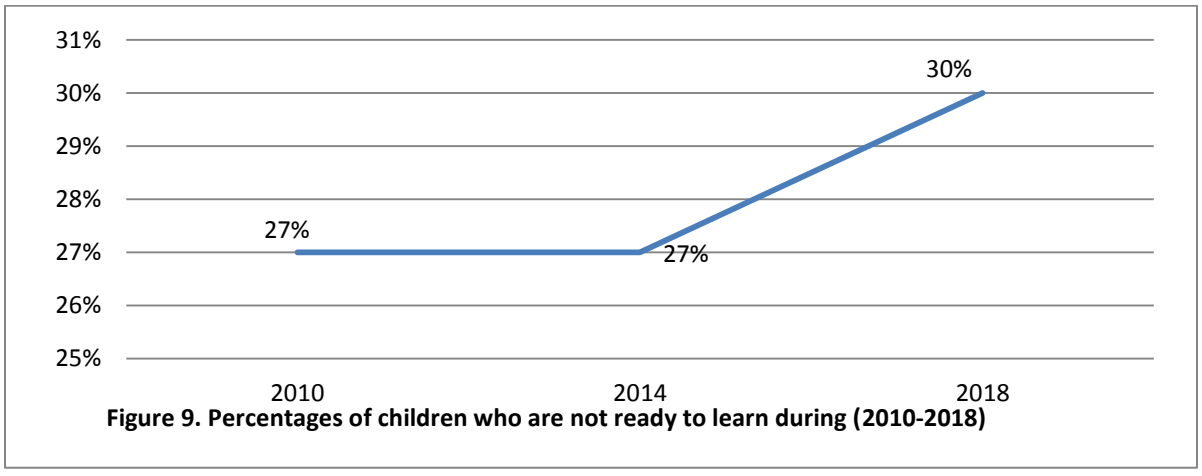


Figure 9. Percentages of children who are not ready to learn during (2010-2018)

[21]The difference between 2014 and 2018 is statistically significant

Second: Changes on the percentage of children who are not ready to learn according to the EDI's domains

The following conclusions can be read through the graph:

-In the physical health and well-being domain: The proportion of children who are not ready to learn increased significantly in 2018 to reach (18.2%), while in 2010 this percentage was 12.8% and in 2014 was (11.1%).

-In the social competencies domain: the proportion of children who are not ready to learn decreased from (10.9%) in 2010 to (10.2%) in 2014 and then to (7.5%) in 2018.

- In emotional maturity domain: the proportion of children who are not ready to learn in this domain increased from (10.5%) in 2014 to (12.2%) in 2018, while it amounted to (11.8%) in 2010.

- In the linguistic and cognitive development domain: the percentage of children who are not ready to learn in this domain decreased from (11.2%) in 2014 to (8.2%) in 2018, while this percentage was (10%) in 2010.

-In communication skills and general knowledge domain: The percentage of children who are not ready to learn in this domain decreased from (13.3%) in 2014 to (9.2%) in 2018, and in 2010 it was (10.2%).

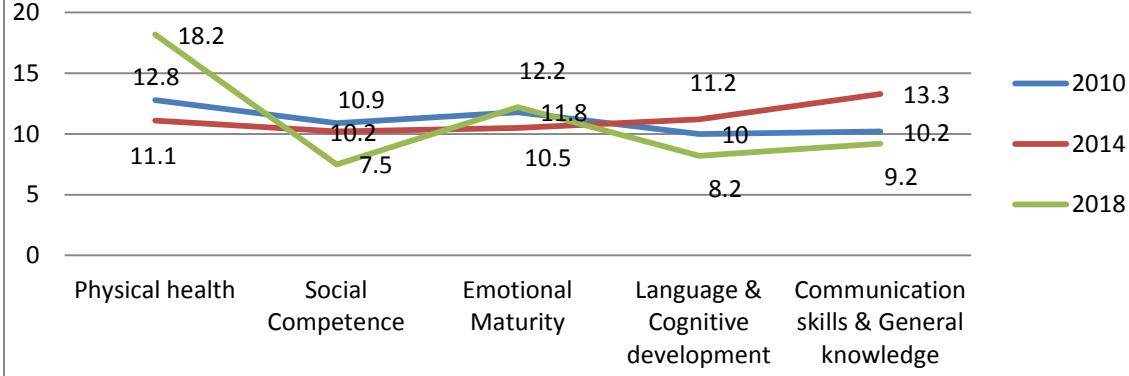


Figure 10. Changing in the percentages of children who are not ready to learn by domain during (2010-2018)

Third: The averages changes on the EDI's domains.

Children's averages were calculated for each of the EDI's domains for 2010, 2014, 2018, as the results expressed in the chart showed that the average of children in 2018 witnessed a rise compared to the years 2010 and 2014 in four domains out of five, namely: social competencies, emotional maturity, linguistic and cognitive development, communication skills and general knowledge, while the average of children on physical health decreased from (8.99) and (8.87) for the years 2010 and 2014 respectively to (7.53) in 2018. Figure (11) shows the children averages by domain for 2010, 2014 and 2018.

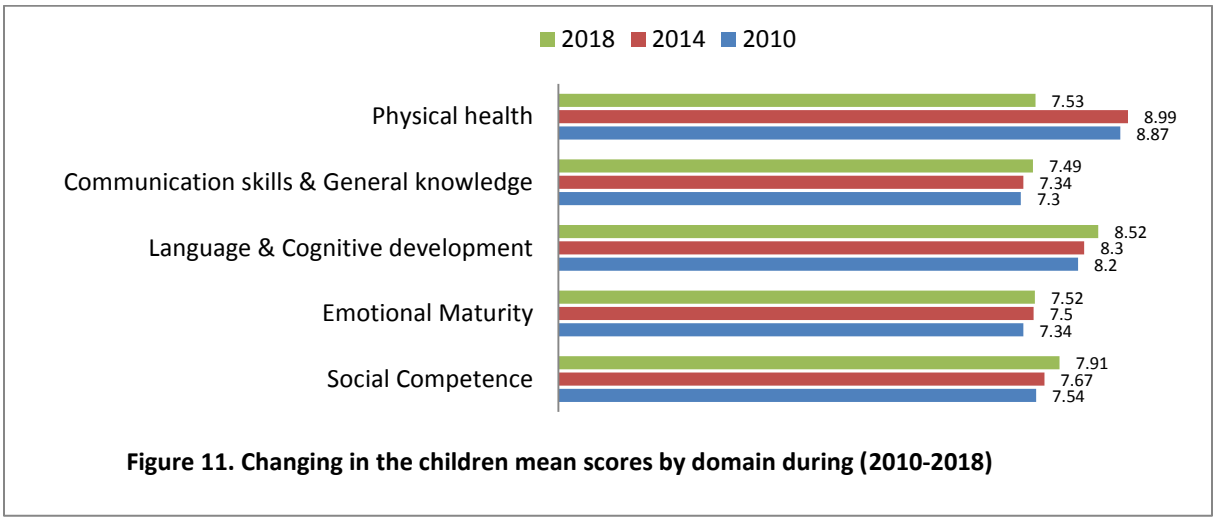


Figure 11. Changing in the children mean scores by domain during (2010-2018)

Results related to the tenth question: "What are the percentages of children who are vulnerable (not ready to learn) among children with disabilities?"

According to the rating of the first grade teachers, 335 children were classified as children with disabilities. The results showed that (71.3%) of them were not ready to learn, while this percentage amounted to (26.1%) among children who were classified as children without disabilities. Table (34) shows these percentages.

Table 34 :percentage of children who are not ready for school on one domain of EDI or more according to the child's classification.

		[22]Frequency	Percentage %
Children with disabilities	**Not ready to learn**	239	71.3
	Ready to learn	96	28.7
	Total	335	100.0
Children without disabilities	**Ready to learn**	3670	73.9
	Not ready to learn	1294	26.1
	Total	4964	100.0

However, when calculating the proportions of children who are classified as not ready to learn on two domains or more, we see a significant change in these percentages as shown in table (35). The percentage of children with disabilities who are not ready to learn on two or more domain was (47.5%) compared to (10.5%) only in children with disabilities.

Table 35: Percentage of children who are not ready for school on two or more dimensions of early childhood development according to the child's classification

		Frequency	Percentage %
Children with disabilities	**Ready to learn**	176	52.5
	Not ready to learn	159	47.5
	Total	110	100.0
Children without disabilities	**Ready to learn**	4442	89.5
	Not ready to learn	522	10.5
	Total	4964	100.0

[22] There are "408" missing cases on this variable, and "309" cases that teachers did not able to classify.

Results related to the eleventh question:" **Are there statistically significant differences at level of significance ($\alpha = 0.05$) in readiness to learn between children with disabilities and non-disabled children?**"

The results showed that there are apparent differences between the averages of children without disabilities and children with disabilities in all EDI's domains in favor of children with disabilities. Table 36 shows the averages and standard deviations of children's scores by child's classification in all EDI's domains.

Table 36: The means, and standard deviations on all EDI's domains according to child's classification.

		Sample size	Mean(mean)	standard deviation	Errors of the mean estimation
Physical health and well being	Children with disabilities	312	6.8892	1.12544	.06372
	Children without disabilities	4727	7.5644	.76375	.01111
Social Competence	Children with disabilities	331	5.9094	2.45987	.13521
	Children without disabilities	4949	8.0421	1.93106	.02745
Emotional Maturity	Children with disabilities	328	6.1760	1.75213	.09675
	Children without disabilities	4860	7.6319	1.77723	.02549
Language & Cognitive development	Children with disabilities	331	5.9928	3.05982	.16818
	Children without disabilities	4940	8.6778	1.94629	.02769
Communication skills & General knowledge	Children with disabilities	333	4.6603	3.04279	.16674
	Children without disabilities	4954	7.6738	2.45061	.03482

To examine the statistical significance of the apparent differences between the averages, the T- test of the independent samples was performed for all domains. Based on that, table 37 shows statistically significant differences at the level of statistical significance ($\alpha = 0.05$) between the averages of children without disabilities and children with disability in all of EDI's domains for the favor of children without disabilities.

Table 37: Results of T-test to examine the significance of differences between the mean scores of children without disabilities and children with disabilities in all EDI's domains.

	Mean differences	Errors of means differences	T value	Degrees of freedom	statistical significance
Physical health	-.67526	.04623	-14.607	5037	.000
Social Competence	-2.13279	.11175	-19.086	5278	.000
Emotional Maturity	-1.45590	.10130	-14.372	5186	.000
Language & Cognitive development	-2.68502	.11548	-23.250	5269	.000
Communication skills & General knowledge	-3.01355	.14107	-21.362	5285	.000

Chapter IV: Conclusions and Recommendations

This part of the report summarizes the substantive observations and suggests some recommendations to the concerned authorities, especially the MOE.

First : Status of children readiness to learn in Jordan

Jordan is exerting continuous efforts to improve children's learning opportunities through attention to early childhood in all its aspects. Despite this concern, the proportion of children who are not ready to learn on one domain or more has risen from 27% in 2010 and 2014 to 30% in 2018. This may be due to the increasing of the proportion of children who are not ready on the physical health domain from (11.1%) in 2014 to (18.2%) in 2018. Indeed, this may be interpreted by the hyper-tendency of children to sit for long periods of time in front of television, and to use various means of information and communication tools in practicing their hobbies, and spend long times in playing electronic games, as the results of the parents' questionnaire showed that (44.8%) of the children's parents indicated that they always or sometimes allow their child to watch television for a long time and (33.4%) of them always or sometimes allow the child to play electronic games for long periods, consequently this reduces the available time to physical activities, and this was reflected in their low performance on the physical health domain. On the other hand, it may be due to an increase in the proportion of women entering the labor market, where according to the official data released by the Department of Statistics, the unemployment rate among females dropped to more than 7%, which means that the proportion of mothers who are away from home for a long time is increasing, thus reducing the chances of parental care for the child.

The results also showed the continuation of inequality between the different groups of children, as the readiness level of the urban's children was better than that of rural children in all domains. This may be due to a large number of interrelated reasons, including the high level of education for urban mothers and fathers compared with those live in the rural, where the results of the study showed that 40% of the children in the urban are children of mothers with a the intermediate diploma or higher, compared with 34.3% in the rural areas. In addition to that, it may be due to higher family income in the urban areas compared to rural areas. Actually, the indicators showed that (21.4%) of

children from urban are with family income 600 JD or more compared to only (12.1%) in rural areas. Moreover, the results showed a statistically significant correlation between these variables and the children's scores on the EDI's domains, thus it enhances this interpretation.

The results revealed that females readiness to learn in the physical health domain, social competencies domain, and emotional maturity domain was better than the males' readiness to learn, while males' readiness to learn is better than females' readiness to learn in the linguistic and cognitive development domain and communication skills and general knowledge domain. However, male superiority over these two domains may be due to the high scores for some male, thus it contributed in increasing the averages for males on these two domains. In contrast, the data indicated that the percentages of non-readiness to learn from males on all domains were higher than that of females, including the linguistic and cognitive development domain as well as the communication skills and general knowledge domain.

The results showed that the differences between males and females on all EDI's domains are existed despite the control on child's place of residence, child's enrolment in the KG, and KG's type in the favour of females, as the results showed that female averages were higher than those of males in rural and urban areas. The results also showed that the averages of females who enrolled to KGs were higher than that of males who enrolled to KGs and this difference also appeared among females and males who did not enrolled to KG for the favour of female .The results also showed that the averages of females who enrolled to public KGs were higher than that of males. Moreover, the results also showed differences between females and males who enrolled in private KGs in favor for females, among the factors that contribute to the variation in readiness to learn between males and females is the family and social upbringing methods, as it seems that there are differences in the way parents and family generally deal with the child's gender, and these differences are based on the parents' prior expectations of male and female behaviour, where the family and society are more tolerant with the child when it comes to playing outside the home or performing homework in KG, or doing some simple tasks inside the house. In addition to that, social norms also reinforce girls' motivation to learn, discipline and commitment to parents' instructions.

A group of variables play a positive role in improving the child's readiness to learn, as the level of parental education, especially mother's education, is shown as a variable that increases the chances of improving children's readiness to learn. Moreover, the results indicate that the child's enrolment in KG increases the chances of the child's physical, social, emotional and linguistic development compared to children who have never attended KG.

On the other hand, the results showed that, the readiness to learn levels among children in some directorates of education were weak compared to other directorates of education. However, with many uncontrolled variables such as parents' education, family income, and enrollment in KG, a changes in readiness to learn levels in these directorates can be observed when adjusting such variables. However, it is useful to consider these results when implementing any policies related to the improvement of the early childhood sector, as the education directorate of the Southern Shouna and Al-Qaser directorate of education have been lagged behind in most domains. And, it was revealed that there were a number of directorates of education that have an average less than the national average for all domains and these directorates are: Ajloun, Sahab, Qweismeh, defense directorate of education, AlQaser, Jerash, Jeezza, and the Southern Shouna. It will be useful for the MoE and other supporting agencies to prioritize those domains in any programs targeting early childhood, so that the focus of these programs is the domain where weakness has been found in the concerned directorate.

The results showed a weakness in the level of readiness to learn in some sub-domains, as it appeared that the readiness of children on the "physical independence" sub-domain, which is part of the "physical health domain" was very weak, out of the behaviors which are an indication to this domain: use the bathroom independently most of the time, show preference for the use of a particular hand (right over the left or vice versa), show a balance and synergy (moving without colliding objects).In addition to that, the results also showed that the performance of children in the domain of "readiness to explore new things" within the social competencies domain was the least based on teacher ratings, out of the behaviors which are an indication to this domain: he is curious about the world around him, has a passion for playing a new game, has a passion to play a new game, has a passion to play / read a new book. Whereas, in the emotional maturity domain, the

results showed that the performance of children according to teachers ratings in the "prosocial and helping behavior" sub-domain was the lowest compared to the other sub-domains of emotional maturity, out of the behaviors which are an indication to this sub-domain: will try to help someone who has been hurt, offering help to other children who have difficulty with a task, comforts a child who is crying or upset, spontaneously helps to pick up objects which another child has dropped (e.g pencils, books). Also, the results indicated that the average of children on the "advanced knowledge" sub-domain, such as advanced reading and writing skills, which is part of the linguistic and cognitive development was lower than other sub-domains averages that composing it, out of the behaviors which are an indication to this sub-domain: can read complex words, can read simple sentences, can write simple words.

Second: Factors related to readiness to learn

There is no doubt that the readiness of children to learn is associated with many factors, which include the genetic, and environmental factors, so the rich environment in stimuli contributes in putting the child on the right development track from all aspects; mentally, psychologically, and physically. According to Angenent and Deman, (1989) the school readiness is related to social, cultural and economic factors, as the study showed a statistically significant association between intelligence and school readiness, with correlation coefficient (0.38), and statistically significant correlation between school readiness and gender, where the correlation between these two variables was 0.34 for the favor of females, while the results indicated that there was no statistically significant correlation between the child's social maturity and school readiness.

Olsen (2010) found that the difference of age of enrollment in KGs which may be up to 12 months may be a cause of difference in the level of school readiness. As that early educational programs are also linked to children's readiness to learn, where research has shown that children who enroll in early school programs are more likely to be ready than those who do not attend these programs. Olsen also notes that parent involvement and support for children have a positive impact on readiness to learn, so families that exposure their children to the books and meaningful educational experiences will help their children to move smoothly to school.

The results indicated that there are key variables that have a role in interpreting the differences in the level of readiness to learn, where child's gender, mother's education, child's enrollment in KG, and parent's practices with the child are the most significant variables. Indeed, this indicates that the different contexts that surround the child are likely make a difference in the level of readiness to learn.

The results revealed that the variable of child enrollment in the KG is the most important variable in the physical health domain, and the communication and general knowledge domain. Whereas, child's gender is the most important variable in the social competencies and emotional maturity domains, mother's education emerge as the most important variable in the linguistic and cognitive development domain. But even so, the results show that there are a large number of variables that have not been measured which explain a large part in children's scores variations on various EDI's domains.

Third: Change in the status of readiness to learn

As mentioned earlier, the percentage of children who have not been ready to learn on one EDI domain or more has risen from 27% in 2014 to 30% in 2018. However, there has been an improvement in 2018 in the levels of readiness to learn - as it measured by the averages - in all EDI's domains except for physical health domain; there was a decline in the average of individuals on this domain in 2018, and as indicated by the results, out of factors that explain the variation in this domain are: parents practices with the child, mother's education, KG enrollment, child behaviors at home, and father's education, child's gender, school's location.

Fourth: Readiness to learn for disabilities children

The results showed statistically significant differences between the averages of children without disabilities and children with disabilities in all EDI's domains, where the scores of children with disabilities were low on all domains. However, it was noticeable that their averages in the communication skills and, general knowledge, and social competencies domains was lower than their averages in other domains

The results indicated that (71.3%) of children with disabilities were not ready to learn on one domain or more, and that nearly half of the children with disabilities are not ready to learn at two domains of the EDI compared with 10.5% for the non-disabilities children. It may be appropriate to continue programs that integrate children with disabilities with

their non-disabled counterparts in the regular classes to increase their social competencies development.

Recommendations and Suggestions

Based on the results of the study, the following recommendations can be proposed:

First: Develop the necessary measures to reduce the proportion of children who are not ready to learn in Jordan, these measures include the following:

- Expanding the establishment of public KGs, and encouraging the private sector to invest in this sector, especially in the directorates of education, which showed weakness in percentages and averages of readiness to learn.
- Evaluating the quality of education offered to children in public and private KGs and identifying the factors that contribute to the quality of education introduced in the private KGs and benefiting from the international best practices in this field.
- Expansion of full-time and part-time KGs programs, and targeting children of different nationalities with a focus on vulnerable children (such as poor and refugees).

Second: Implement programs and campaigns at the level of kindergartens, schools and local communities to raise awareness of the importance of physical and motor activities for children, and the consequences risks on the children who spend long periods watching television or using smart phones and digital panels.

Third: Implement training programs on upbringing and parenting methods, and give priority of implementation for the education directorates in which children are weak in all EDI's domains, as well as to illiterate mothers, and mothers who hold a scientific qualification below the secondary school. In light of this, extended programs with wider participations by parents should be provided for mothers, as these programs will contribute to improve readiness to learn by enhancing the empowerment of parents by raising their readiness.

Fourth: Gender inequality should be taken in consideration in the implementation of early childhood programs, so that the focus should be on social competence and

emotional maturity domains for males, whereas focusing should be on communication skills and general knowledge domain for females.

Fifth: Develop ECE policies that increase opportunities for reducing the gap between different groups of children, especially the rural children group, low-income families, and families with low parent's education, through conducting studies to analyze current policies and evaluate exist programs.

Sixth: Conducting qualitative studies to identify the factors that contribute to the variation in the level of readiness to learn.

Seventh: Promote the inclusive education programs for children with disabilities in public schools, as well as develop the early detection tools and the early intervention programs for children with disabilities and developmental delay. In addition to that, the Washington Group Questions for disability children should be included in the future studies.

List of references

Aiona , S.(2005) . Assessing School Readiness. **Educational Perspectives** , Volume(30), Issue 1.

Angenent, H & Deman, A. (1989) . Intelligence , Gender, Social Maturity , and School Readiness in Dutch First Graders. **Social Behavior and Personality: an International Journal**. Vol (7), Issue (2). P.205-210.

Bonnett.L.(2017).**Family Factors that Influence Students' Behavior in School**.available[on-line]:https://www.livestrong.com/article/562595-family-factors –that-influence-students-behaviors-in-school/.

Gray, I .(2012). Perspective on School Readiness in Rural Ireland : The Experience of Parents and Children. **International Journal of Early Years Education**. Vl.(20), No.(1).p 15-29.

Janus, M. (2006).**The EDI: A Tool for Monitoring Children's Development and Readiness for School. [On-line].**http://www.offordcenter.com.readiness.

Janus, M. & Offord, D. (2007).**Development and Psychometric Prosperities of the EDI (EDI**): **A measure of children's school readiness to learn**. Canadian Journal of Behavioral Science, 39, 1, pp1-22**. [On-line].**http://www.offordcenter.com.readiness**.**

Olsen,L.(2010).**Identifying Factors Important to the Assessment of School Readiness Among Students in the Howard Sumac School District**. Unpublished Master Thesis, the Graduate School , University of Wisconsin-Stout.

Ounce Prevention Fund.(2017). **Starting Smart: How Early Experiences Affect Brain Development**.2nd addition. Available at : https://www.theounce.org/wp-content/uploads/2017/03/StartingSmart.pdf

Petig, A. (2015). **The Transition to KG : Factors Associated With a Positive Adjustment** . Unpublished Doctoral Dissertation. Iowa State University . USA.

Pieterse, S,. (2012). **School Readiness : What it is so Important** . Available[on-line]: https://www.claremontpractice.co.za/newsletter-0912.html

Youn. M. (2016). Inequality from the First Day of School : The Role of Teachers' Academic Intensity and Sense of Responsibility in Moderating the Learning Growth Gap. **The Journal of Educational Research**. Vol.(109),No.(1),p 50-67.

منظمة الصحة العالمية.(2016). **الاستثمار في النماء أثناء الطفولة المبكرة**. نشرة إخبارية . متوفرة على الانترنت : http://www.who.int/ar/news-room/detail/04-01-1438-investing-in-early-childhood-development-essential-to-helping-more-children-and-communities-thrive-new-lancet-series-finds

Annexes [23]

[23]Intellectual property rights must be adhered to, as the instrument of early development may only be used or copied with the permission of McMaster University / Canada.

أداة التطور المبكر
EDI (EDI)

To the good teacher

After good greeting „

The National Center for Human Resource Development (NCHRD) , in cooperation with the MOE and with the support of the United Nations Children's Fund, is preparing a study on the school readiness of children. Please fill out the EDI for each child you have chosen from the Division you are teaching and based on your experience with each of these children. In case you need further clarification on any of the items of the instrument, you should use the instrument guide that will be provided to you by the educational supervisor. The instrument collects data on various aspects of development in children. The results of the study will help the MOE and other bodies to develop appropriate educational policies to raise the level of readiness of our children from various aspects of their growth.

We appreciate your effort and your contribution to this work. The information you provide will be used for scientific research and the individual results will not be displayed, but the results are presented as totals.

Thanks for your cooperation

EARLY DEVELOPMENT INSTRUMENT
A Population-Based Measure for Communities
2007/2008

Offord CENTRE FOR CHILD STUDIES

Please fill in the circles like this ● or ⊗ NOT ✗
Please use a blue or black ballpoint pen.

1. Class Assignment
○ JK ● SK (see Guide)

2. Child's Date of Birth:

	dd	/ mm /	yy
0	○○	○○	○○
1	○○	○○	○○
2	○○	○○	○○
3	○○	○○	○○
4	○○	○○	○○
5	○○	○○	○○
6	○○	○○	○○
7	○○	○○	○○
8	○○	○○	○○
9	○○	○○	○○

3. Sex: ○ F ○ M

4. Postal Code:
☐☐☐☐☐☐

5. Class Type:
○ JK
○ SK
○ JK/SK
○ JK/SK/1
○ SK/1
○ Other

6. Date of Completion:

	dd	/ mm /	yy
0	○○	○○	●○
1	○○	○○	○○
2	○○	○○	○○
3	○○	○○	○○
4	○○	○○	○○
5	○○	○○	○○
6	○○	○○	○○
7	○○	○○	○○
8	○○	○○	○●
9	○○	○○	○○

7. Exceptional/Special Needs:
○ Yes ○ No

8. Child considered ESL:
○ Yes ○ No

9. French Immersion:
○ Yes ○ No

10. Other Immersion:
○ Yes ○ No

11. Aboriginal:
○ Yes ○ No ○ Don't Know
(North American Indian, Métis, or Inuit)

12. Child's First Language(s):
○ English only
○ French only
○ Other only ☐☐☐
○ English & French
○ English & Other ☐☐☐
○ French & Other ☐☐☐
○ ☐☐☐ & ☐☐☐
Other Other
(Refer to Guide for language codes in "other" categories. If you do not know the "other" language code, use "000".)

13. Communicates adequately in his/her first language:
○ Yes ○ No ○ Don't know

14. Student Status:
○ in class more than 1 month
(skip pages 2-8)
○ in class less than 1 month
○ moved out of class
○ moved out of school
○ other

15. Student is repeating this grade:
○ Yes ○ No

59822

Section A - Physical Well-being

1. About how many regular days (see Guide) has this child been absent since the beginning of school in the fall?

Number of days absent: [ ][ ] . [ ][ ]

Since the start of school in the fall, has this child sometimes (more than once) arrived:	yes	no	don't know
2. over- or underdressed for school-related activities	○	○	○
3. too tired/sick to do school work	○	○	○
4. late	○	○	○
5. hungry	○	○	○

Would you say that this child:	yes	no	don't know
6. is independent in washroom habits most of the time	○	○	○
7. shows an established hand preference (right vs. left or vice versa)	○	○	○
8. is well coordinated (i.e., moves without running into or tripping over things)	○	○	○

How would you rate this child's:	very good/ good	average	poor/ very poor	don't know
9. proficiency at holding a pen, crayons, or a brush	○	○	○	○
10. ability to manipulate objects	○	○	○	○
11. ability to climb stairs	○	○	○	○
12. level of energy throughout the school day	○	○	○	○
13. overall physical development	○	○	○	○

Section B - Language and Cognitive Skills

How would you rate this child's:	very good/ good	average	poor/ very poor	don't know
1. ability to use language effectively in English	○	○	○	○
2. ability to listen in English	○	○	○	○
3. ability to tell a story	○	○	○	○
4. ability to take part in imaginative play	○	○	○	○
5. ability to communicate own needs in a way understandable to adults and peers	○	○	○	○
6. ability to understand on first try what is being said to him/her	○	○	○	○
7. ability to articulate clearly, without sound substitutions	○	○	○	○

Would you say that this child:	yes	no	don't know
8. knows how to handle a book (e.g., turn a page)	○	○	○
9. is generally interested in books (pictures and print)	○	○	○
10. is interested in reading (inquisitive/curious about the meaning of printed material)	○	○	○
11. is able to identify at least 10 letters of the alphabet	○	○	○
12. is able to attach sounds to letters	○	○	○
13. is showing awareness of rhyming words	○	○	○
14. is able to participate in group reading activities	○	○	○
15. is able to read simple words	○	○	○
16. is able to read complex words	○	○	○
17. is able to read simple sentences	○	○	○
18. is experimenting with writing tools	○	○	○
19. is aware of writing directions in English (left to right, top to bottom)	○	○	○
20. is interested in writing voluntarily (and not only under the teacher's direction)	○	○	○
21. is able to write his/her own name in English	○	○	○
22. is able to write simple words	○	○	○

Section B - Language and Cognitive Skills

Would you say that this child:	yes	no	don't know
23. is able to write simple sentences	○	○	○
24. is able to remember things easily	○	○	○
25. is interested in mathematics	○	○	○
26. is interested in games involving numbers	○	○	○
27. is able to sort and classify objects by a common characteristic (e.g., shape, colour, size)	○	○	○
28. is able to use one-to-one correspondence	○	○	○
29. is able to count to 20	○	○	○
30. is able to recognize numbers 1 - 10	○	○	○
31. is able to say which number is bigger of the two	○	○	○
32. is able to recognize geometric shapes (e.g., triangle, circle, square)	○	○	○
33. understands simple time concepts (e.g., today, summer, bedtime)	○	○	○
34. demonstrates special numeracy skills or talents	○	○	○
35. demonstrates special literacy skills or talents	○	○	○
36. demonstrates special skills or talents in arts	○	○	○
37. demonstrates special skills or talents in music	○	○	○
38. demonstrates special skills or talents in athletics/dance	○	○	○
39. demonstrates special skills or talents in problem solving in a creative way	○	○	○
40. demonstrates special skills or talents in other areas *If yes, please specify:* _____	○	○	○

Section C - Social and Emotional Development

How would you rate this child's:	very good/ good	average	poor/ very poor	don't know
1. overall social/emotional development	○	○	○	○
2. ability to get along with peers	○	○	○	○

Below is a list of statements that describe some of the feelings and behaviours of children. For each statement, please fill in the circle that best describes this child now or within the past six months.

Would you say that this child:	often or very true	sometimes or somewhat true	never or not true	don't know
3. plays and works cooperatively with other children at the level appropriate for his/her age	○	○	○	○
4. is able to play with various children	○	○	○	○
5. follows rules and instructions	○	○	○	○
6. respects the property of others	○	○	○	○
7. demonstrates self-control	○	○	○	○
8. shows self-confidence	○	○	○	○
9. demonstrates respect for adults	○	○	○	○
10. demonstrates respect for other children	○	○	○	○
11. accepts responsibility for actions	○	○	○	○
12. listens attentively	○	○	○	○
13. follows directions	○	○	○	○
14. completes work on time	○	○	○	○
15. works independently	○	○	○	○
16. takes care of school materials	○	○	○	○
17. works neatly and carefully	○	○	○	○
18. is curious about the world	○	○	○	○
19. is eager to play with a new toy	○	○	○	○
20. is eager to play a new game	○	○	○	○
21. is eager to play with/read a new book	○	○	○	○

Section C - Social and Emotional Development

Would you say that this child:	often or very true	sometimes or somewhat true	never or not true	don't know
22. is able to solve day-to-day problems by him/herself	○	○	○	○
23. is able to follow one-step instructions	○	○	○	○
24. is able to follow class routines without reminders	○	○	○	○
25. is able to adjust to changes in routines	○	○	○	○
26. answers questions showing knowledge about the world (e.g., leaves fall in the autumn, apple is a fruit, dogs bark)	○	○	○	○
27. shows tolerance to someone who made a mistake (e.g., when a child gives a wrong answer to a question posed by the teacher)	○	○	○	○
28. will try to help someone who has been hurt	○	○	○	○
29. volunteers to help clear up a mess someone else has made	○	○	○	○
30. if there is a quarrel or dispute will try to stop it	○	○	○	○
31. offers to help other children who have difficulty with a task	○	○	○	○
32. comforts a child who is crying or upset	○	○	○	○
33. spontaneously helps to pick up objects which another child has dropped (e.g., pencils, books)	○	○	○	○
34. will invite bystanders to join in a game	○	○	○	○
35. helps other children who are feeling sick	○	○	○	○
36. is upset when left by parent/guardian	○	○	○	○
37. gets into physical fights	○	○	○	○
38. bullies or is mean to others	○	○	○	○
39. kicks, bites, hits other children or adults	○	○	○	○
40. takes things that do not belong to him/her	○	○	○	○
41. laughs at other children's discomfort	○	○	○	○
42. can't sit still, is restless	○	○	○	○
43. is distractible, has trouble sticking to any activity	○	○	○	○
44. fidgets	○	○	○	○
45. is disobedient	○	○	○	○

59822

Section C - Social and Emotional Development

Would you say that this child:	often or very true	sometimes or somewhat true	never or not true	don't know
46. has temper tantrums	○	○	○	○
47. is impulsive, acts without thinking	○	○	○	○
48. has difficulty awaiting turn in games or groups	○	○	○	○
49. cannot settle to anything for more than a few moments	○	○	○	○
50. is inattentive	○	○	○	○
51. seems to be unhappy, sad, or depressed	○	○	○	○
52. appears fearful or anxious	○	○	○	○
53. appears worried	○	○	○	○
54. cries a lot	○	○	○	○
55. is nervous, high-strung, or tense	○	○	○	○
56. is incapable of making decisions	○	○	○	○
57. is shy	○	○	○	○
58. sucks a thumb/finger	○	○	○	○

Section D - Special Problems

1. Does the student have a problem that influences his/her ability to do school work in a regular classroom?

○ yes ○ no ○ don't know (If answered no/don't know go to question 3)

If YES above, please mark all that apply.
Please base your answers on medical diagnosis or parent/guardian information.

	yes
2a. physical disability	○
b. visual impairment	○
c. hearing impairment	○
d. speech impairment	○
e. learning disability	○
f. emotional problem	○
g. behavioural problem	○
h. home environment/problems at home	○
i. other *(if known, print below)*	○

3. Do you feel that this child needs further assessment?	yes	no	don't know
	○	○	○

If yes , please specify in print: _____

59822

Section E - Additional Questions

To the best of your knowledge, please mark all that apply to this child:

	yes	no	don't know
1. attended an early intervention program *Specify if known, please print:* _____	○	○	○
2. has been in non-parental care on a regular basis prior to kindergarten entry	○	○	○

If yes, please specify type of care arrangement (please refer to Guide for examples):

2a. Centre-based, licensed, non-profit	○	2e. Other home-based, unlicensed, relative	○
2b. Centre-based, licensed, for profit	○	2f. Child's home, non-relative	○
2c. Other home-based, licensed	○	2g. Child's home, relative	○
2d. Other home-based, unlicensed, non-relative	○	2h. Other/don't know	○

	full-time	part-time	don't know
2i. To the best of your knowledge, prior to the child's entry to kindergarten, was this arrangement	○	○	○

	yes	no	don't know
3. attended other language or religion classes *Specify if known, please print:* _____	○	○	○
4. attended an organized pre-school/nursery school (**only if *part-time*, and if it was *not* the main child-care arrangement**)	○	○	○
5. attended Junior Kindergarten	○	○	○
6.	○	○	○
7.	○	○	○
8.	○	○	○
9.	○	○	○
10.	○	○	○

If you have any comments about this child and her/his readiness for school, list them below, please print.

59822

Questionnaire to the mother or caregiver

To the good mother/good caregiver

After good greeting,

The National Center for Human Resource Development (NCHRD) , in cooperation with the MOE and with the support of the (UNICEF), is preparing a study on school readiness. Please answer the attached questions that relate to your child accurately and objectively, as the results of the study will help the MOE and others parties to develop appropriate educational policies to raise the level of our children from various aspects of their growth.

We appreciate your efforts and contribution to this work knowing that the information you provide will be used for scientific research and the individual results will not be presented, but the results were presented in the form of totals.

Thanks for your cooperation

Part 2: Parental practices with the child

The following is a set of statements that relate to parents' practices towards their child. There is no right or wrong words so please estimate the value of your child who is studying in KG. Response levels are one of the following: Always, sometimes or never by placing an X in the appropriate box.

Phrase Number	Phrase	Response		
		Always	sometimes	never
1	I give my child independence to practice what he wants.			
2	I follow the behaviors of my child / child with interest.			
3	I pressure on my child to abide by the normal behavior standards			
4	I encourage my child to complete the tasks that I give him / her			
5	I teach my child to listen to instructions			
6	I am lenient with my child in giving him the opportunity to play rather than doing homework.			
7	I allow my child to watch TV for long periods of time.			
8	I allow my child to play electronic games for long periods of time.			
9	I allow my child to play outside the house continuously.			
10	I read stories for my child regularly.			
11	I do not lend my child any attention			
12	I tolerate my child constantly when he / she is committing bad behavior.			
13	I punish my child when he misuse			
14	I share my child playing			
15	I give my child the opportunity to do certain tasks for the house (such as cleaning furniture, arranging pots, preparing meals			
16	I do not care about the level of education that my child will have in the future.			
17	When I see that my child is sad or afraid, I often hug him.			

Phrase Number	Phrase	Response		
		Always	sometimes	never
18	I encourage my child to excel in playing on his / her peers.			
19	I encourage my child to read.			
20	I urge my child to consistently respect ethical standards (such as honesty, integrity, respect for adults, obedience to parents)			
21	I do not care if my child not fulfilling his/her homework.			
22	I encourage my child to be an important person in the future.			
23	I try to teach my child a second language (like English)			
24	I will punish my child if he does not pay attention to what I am saying to him / her.			
25	I cannot be complacent about the fact that my child stays long outside the house.			
26	I teach my child well organized in everything.			
27	I will punish my child if he fights with his peers.			
28	I encourage my child to show his superiority in everything he does.			
29	I spend a lot of time teaching my child some useful things (like reading, counting, drawing, sports, music...)			
30	I do not care about the educational future of my child			

Part III: Additional Questions

Please specify what applies to your child with regard to the matters described below

Phrase number	Phrase	Response	
		Yes	No
1	Does your child use the computer at home?		
2	Does your child use the internet at home?		
3	Does your child play the cube game at home?		
4	Does the mother help her child to do homework?		
5	Does the father help his child to do his homework?		
6	Do parents or one play with the child at home?		
7	Do the mother / father read a story for the child?		
8	Does the child sleep in his own room?		
9	Does the child have electronic games?		
10	Does the child have a Tablet PC (tablet, iPad, etc.)?		
11	Are there a computer/ laptop at home?		
12	Does the child have stories at home?		

Thank you for your cooperation in filling this questionnaire