

**Building a Management Information System for Juvenile
Welfare Centre in the UAE and Investigate the
Effectiveness of its Implementation**

بناء نظام معلومات إداري لمركز رعاية الأحداث في دولة الإمارات العربية
المتحدة والتحقيق مدى فعالية تطبيق هذا النظام

by

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of the requirements for the degree of
MSc INFORMATICS**

at

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Abstract

This project investigates the use of a management information software system for juvenile welfare centre in UAE by assessing the staff's performance in operating the project and examining the viability of the software system implementation in applying the work- streams. A review of the juvenile share system was carried out to understand how different government handles the juvenile offensive cases and the need for further actions. In any case, it was noted from research made that juvenile beneath age 18, that are found to commit serious offences are taken to correction facilities to be evaluated, and certain measures are taken by the government to ensure such children are reoriented.

The research demonstrated the software system by collecting and analysing data after building the software interface. The interview was carried out with the staff of Al Mafraq Juvenile Welfare Centre to crevice the efficiency of the software. The outcome of the exercise was limited to the computer literacy or operability of the staff's.

Keywords: Juvenile Welfare Centre (JWC), software system, UAE, qualitative

خلاصة

يقوم هذا البحث على التحقيق في استخدام نظام المعلومات الإدارية لمركز رعاية الأحداث في دولة الإمارات العربية المتحدة وذلك بقياس تقييم أداء الموظفين في تشغيل المشروع ودراسة جدوى تنفيذ نظام البرمجيات في تطبيق مسارات العمل. وقد أجري استعراض لمشاركة نظام الأحداث لفهم كيفية تعامل الحكومات مع قضايا الأحداث المختلفة ومدى الحاجة إلى إضافة المزيد من الإجراءات. وعلى أية حال، لوحظ من البحوث أنه يتم نقل الأحداث الذين تقل أعمارهم تقييمهم واتخاذ التدابير يتم والتي والذين يرتكبون جرائم خطيرة، إلى مرافق التصحيح عاماء، عن الثمانية عشر الضرورية من قبل الحكومة لضمان إعادة توجيه هؤلاء الأطفال. استعراض البحث نظام البرمجيات من خلال جمع وتحليل البيانات وذلك بعد بناء واجهة البرنامج لقياس تحقيق النتائج المطلوبة. وقد تم إجراء مقابلة مع موظفي مركز رعاية الأحداث في المرفق لغرض رفع كفاءة البرنامج، حيث كانت نتيجة هذه العملية تقتصر على معرفة الحاسوب أو قابلية تشغيل الموظفين للبرنامج

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Table of Contents

Chapter 1: Introduction	1
1.1 Overview	1
1.2 Problem Statement	1
1.3 Objectives of the Research	2
1.4 Research Questions	3
1.5 Research Methodology	3
1.6 Research Structure	3
Chapter 2: Literature Review	5
2.1 Introduction	5
2.2 Background	6
Juvenile Centres in UK and USA	6
2.3 Child Protection Law	7
2.4 Juvenile Management Information System	7
Juvenile Centres Law in UAE	8
2.5 Research Analysis Method	9
Qualitative Method	9
Interviews and Data Analysis	11
2.6 Conclusion	13

Chapter 3: Research Methodology	14
3.1 Research Methodology	14
3.2 Software System Principles and Experience	15
3.2.1 Data Collection Towards Building Software System	15
3.3 Software System Structured	16
3.4 Overview of Software System	19
3.5 Implementation Process in JWC Centre	28
3.5.1 Research Questions	29
3.5.2 Interviews Structure	29
3.5.3 Analysing Interview Data	30
3.6 Links Between Research and Interview Questions	33
3.7 Summary	34
Chapter 4: Findings and Discussions	35
4.1 Staff Data Analysis	35
4.2 Finding and Results	35
4.2.1 Main Finding	35
4.3 Research Questions' Analysis	37
4.4 Conclusion	38
Chapter 5: Conclusion and Future Work	39
5.1 Conclusion	39

5.2	Recommendation and Future Work	40
	References	42
	Appendices	46

List of Tables

Table 1: Staff Members Towards the Use of JWC Software System.	30
Table 2: Staff Members Towards the Use of JWC Software System.	32
Table 3: The Relationship Between the Research Questions and Staff Interviews.	33

List of Figures

Figure 1: Implementation Timeline for Al Mafraq JWC System	15
Figure 2: Main Page of Al Mafraq JWC	19
Figure 3: Work Streams Sections (Description And Applying)	20
Figure 4: Twelve Description Work Streams	21
Figure 5: Product Description for Each Work Stream	22
Figure 6: Schedule for Each Product Description	24
Figure 7: Main Page for the Access File	25
Figure 8: Work Streams Product Data	26

Chapter 1: Introduction

This chapter: Introduced an overview of the research, sheds light on the problem definition. The aim of the research is defined. The research question has been clearly stated. The methodology that was implemented has been demonstrated. Research structure is addressed.

1.1 Overview

Juvenile centre software systems are new technology approaches to support staff and youths. These systems have been tried and implemented in various centres worldwide. Software systems incorporated with various areas such as e-Health, suicidal behaviour, justice systems and many others to handle juvenile delinquency cases. The systems helped in searching and sharing data about juveniles across worldwide. These systems helps the staff in detention centre to acknowledge about juvenile background and it also helps them avoid missing paperwork. Furthermore, it helps staffs to monitor the juvenile progress timeline in the centre and to plan for future steps. The aim of this research is to investigate staff attitudes toward the implementation and use of the system within JWC in UAE.

1.2 Problem Statement

Juvenile centre software systems are new technology approaches to support staff and youths. These systems have been tried and implemented in various centres worldwide. Software systems incorporated with various areas such as e-Health, suicidal behaviour, justice systems and many others to handle juvenile delinquency cases. The systems helped in searching and sharing data about juveniles across worldwide. These systems helps the staff in detention centre to acknowledge about juvenile background and it also helps them avoid missing paperwork. Furthermore, it helps staffs to monitor the juvenile progress

timeline in the centre and to plan for future steps. The aim of this research is to investigate staff attitudes toward the implementation and use of the system within JWC in UAE.

1.3 Objectives of the Research

Siegel & Welsh, 2015, defined the detention as a “temporary care of a child alleged to be delinquent who requires secure custody in physically restricting facilities pending court disposition or execution of a court order”. The idea of having a separate prison for youth was to protect them from learning criminal behaviour from adults. Where the fundamental thought from these institutions is to teach offenders the significance commitments to society and for their future upon their release. Juvenile centres are locked institution that cares for offenders whose are under 18. Each offender will go under special processes to subject to procedures. Different systems were used in collecting and storing youth data and to recognise knowledge. The aim is to gather, save and provide access for various departments where knowledge acquired would be beneficial to all sites (Goodman and Darr, 1996, 1998). Providing a software system that cares about the juvenile situation would spread experiential knowledge, and that would save time and knowledge. From there, the idea of implementing software that can protect information and data about each youth would help in different fields.

This research explores stages of building a software system in a Juvenile Centre. This software is related to new project introduced for the staff and shifting the centre from paper to technology use. At that point, investigate the viability of this software in enhancing spreading knowledge in the centre. Knowledge help and serve different areas in the organization. The knowledge needs to be manged and that by elicit information from centre expertise and representing this information in a software.

1.4 Research Questions

The aim of this research is to examine the obstacles JWC staff faced using the new technology. The system captured the work-streams and save data input. Solutions are discovered in facilitating the deployment of the system at Al Mafraq JWC. Two questions will be answered in this research:

- How much the software tool introduced in April 2016 impact on the daily routines of JWC staff?
- Does the system support the main project of the centre

1.5 Research Methodology

The first step in the process of our research methodology is to meet with the interested parties workflow and build software that meets the project needs. In presenting the mechanism, we applied work-streams in a software system. A qualitative method was proposed that will depend on interviewing staffs from the JWC. We plan to contact the project director and head of project implementation. The interview questions are analysed by using Nvivo software. Results lead us in providing an inclusive overview of how the software system helps the staff and youths in JWC to implement the work-streams and improve workflow.

1.6 Research Structure

The dissertation is structured into five chapters as follows:

Chapter 1: Introduced an overview of the research. It sheds light on the problem definition, and defined the aim of the research. The research question has been clearly stated. The methodology that implemented has been demonstrated. Research structure is addressed.

Chapter 2: Reviewed background of establishing the Juvenile centre in the United Kingdom that helps the United States to build their centres. Discuss the aim of established Juvenile centres in both countries. Reviewed the child protection law from Rights of the Child (UNCRC). The different juvenile management information system in the United Kingdom and the United States has been demonstrated. Juvenile Centres law and Worldwide Convention in UAE have been highlighted. Furthermore, research analysis method and the qualitative method has been implemented in the research and analysis stage by using a coding system and explained. The chapter ends with a comprehensive view towards the next chapter.

Chapter 3: Introduced the research methodology that has been utilised to proceed this study. Explains in detail the research questions highlighted by exploring the software system principles and experience. Demonstrates the software system built through data collection steps and its structure. An overview of the software system and implementation process in JWC Centre. Data collection and analysis are presented. The interview structure and steps of analysing the interview data are demonstrated in detail. Moreover, the chapter detects the links between research and interview questions.

Chapter 4: Highlights the findings of the study. The chapter illustrates in details how the interviews have been analysed. Presents the independent and dependent variables where the research questions are answered.

Chapter 5: Concludes the findings of this research alongside a recommendation for future orientation for possible future improvements.

Chapter 2: Literature Review

Over the last couple of years, the reconciliation of technology opens the chance to enhance the services provided that shift from traditional paperwork to relying on digital/electronic. This development impact on juvenile centres in different sectors such as health and education mentoring. Technology interventions offer real-time support for the staff and youth in juvenile centres. It provides an opportunity to improve the work quality and attempt to facilitate youth cases. Applying the software systems helps staff without posing any restrictions on analysing or finding youth data. Literature highlight on the history of juvenile centre founded in the United Kingdom and the United States were presented. This research attempts to detail the stages of juvenile centre progression were presented. Illustrate for the child protection law towards the youths in detentions centres. The integration of technology in building software systems and applying it in juvenile centres has been described. A review of UAE law towards establishing juvenile centres and implementation process were presented. Moreover, explanation of research analysis methods is demonstrated for the qualitative method that has been applied. Finally, presenting the conclusions.

2.1 Introduction

Juvenile centre or youth detention centre is a secure prison for the under age of majority persons, often described juvenile delinquent. The juveniles have been sentenced for an extended period of time or detained for short-term awaiting court hearing goes through a separate arresting system, which sentences or commits juveniles to an individual program or facility (Snyder, H. & Sickmund, M., 2006). The purpose of having juvenile institutions was as a result of youth criminal behaviours acquired through learning from the

adults while they were institutionalised together. Because of this unfavourable influence, the governments established independent juvenile courts and institutions.

2.2 Background

Juvenile Centres in UK and USA

Reforming child offenders starts early in England by a contribution from the criminal Society for the Improvement of Prison Discipline and endeavours from the Reformation of Juvenile Offenders (1815). The first institution established in the United Kingdom in the 18th century which has been suggested by The Gladstone Committee (1895). In 1908, the United Kingdom and the Commonwealth, the framework was developed and formulated per national in the Prevention of Crime Act.

In 1824, the first movement starts of reforming for juveniles in United States. Regarding the limited historical records availability, it was hard to identify the first juvenile centre in United State (Tappan, 1949). Some resources mentioned that the first State Reform School for boys had been opened around 1848 to 1884. It was a school located in Westborough Massachusetts which was considered as the state institution for juvenile offenders. The school focused besides separating juvenile from adult offenders, on rehabilitation to change their life.

However, the United States juvenile institution systems were established on the English Bridewell institution. The system emphasised on the teaching of life and trade skills. The purpose of this system was due to criminality is a result of a consequence of social environment. So, teaching the youth new skills will help them to qualify in society when released.

2.3 Child Protection Law

The United Nation Convention 1989 of the Rights of the Child (UNCRC) founded that “all children have a right to protection, to participation, to personal development and basic material provision” (Muncie, 2008). Whence of the justice for juvenile confirmed the main basics for the child about ‘best interests’, choosing the custody as of last option, providing special places away from the adults and applying a procedure that respects the child dignity. The UNCRC is vastly ratified human rights treaty across the world. It has been agreeable from most of the countries except the USA. In 1992 has been added to UK Law proceedings from the treaty, most of the countries considered applying Article 3, 9 and 37 in their Juvenile justice system.

2.4 Juvenile Management Information System

The United Nation Convention 1989 of the Rights of the Child (UNCRC) founded that “all children have a right to protection, to participation, to personal development and basic material provision” (Muncie, 2008). Whence of the justice for juvenile confirmed the main basics for the child about ‘best interests’, choosing the custody as of last option, providing special places away from the adults and applying a procedure that respects the child dignity. The UNCRC is vastly ratified human rights treaty across the world. It has been agreeable from most of the countries except the USA. In 1992 has been added to UK Law proceedings from the treaty, most of the countries considered applying Article 3, 9 and 37 in their Juvenile justice system.

The United Kingdom and the United States are applicable to specific standards and protocols for different kinds of facilities in the centres. The various information systems have been applied in the youth detention centres. The Youth Offending Information System (YOIS) in the UK were about to cover the social care and

education records for each juvenile. The implementation started in 2016 after the previous system was considered for replacement in 2012, and it took 2 years for a full implementation (Spencer, 2016). In Texas, the United State used Juvenile Case Management System (JCMS) for reporting, gathering data and other management's activities for all departments in local juvenile probation. The system provides different services of sharing information for everyone juvenile and provides efficient rehabilitative programs and services that fit juvenile individual needs. This system has been designed to be web-based and mobile friendly. Also, to control the juvenile behaviour and provide probation programs, treatments plan and services.

Juvenile Centres Law in UAE

In UAE, the Juvenile centre is an organisation responsible for social caring for juveniles under the UAE Federal Law No 09 of 1976 passed for every delinquent Juvenile and homeless that are under the age of 18. The provision is in conformity with the article 1 from The United Nations Convention of the Rights of the Child (UNCRC) which states that “a child means every human being below the age of eighteen years unless, under the law application to the child, the majority is attained earlier”. The Language formulation of Law No 09 of 1976 is very specific that it does not indicate the juvenile offender's actions as a crime and does not accrue punishments. This Law focuses on “corrective measures”. Corrective measures for the offenders involve sending them to serve in a specialised institution that provides welfare and educational facilities.

In Article 69 of Criminal Code, No 3 of 1987 designates it as: “Detention means the placement of a convicted person in a penal institution legally established for that purpose for the period stated in the sentence. Unless otherwise specified herein, a term

of detention must not be less than a minimum of one month or more than a maximum of three years”.

The article 34 of Law 43 of 1992 determines that each detention centre should have available religious adviser along with full-time social counsellor. They are required to study the physical and mental condition of each offender. This generated and stated from the article 34 of Law No 9 of 1976: “every institution specialised in the welfare and reform of juveniles, and any other premises intended for their reception, shall be supervised by aboard chaired by a representative of the Department of Public Prosecutions and including among its members the director of the institution and a specialist appointed by the minister for Social Affairs. The persons sentenced to placement in such institution shall be released only on the recommendation of the said board”. Besides, the requirement for the juvenile centres has been emphasised in the Article 49 of Federal Act No 43 of 1992. The article affirmed on setting up a council of specialists and experts to guarantee the quality of rehabilitation programs and effectiveness.

Al Mafrq Juvenile Welfare Centre (JWC) is a social and educational institution interested in and focuses on the welfare and rehabilitation of delinquent juvenile to improving their behaviour as a step to reintegrate and reinstate them in the society, so, it is not a punitive facility. The centre was opened in 1995.

2.5 Research Analysis Method

Qualitative Method

To meet the software system objectives, a qualitative method has been applied for collecting data. The qualitative method provides a full picture of the description and drives the analysing process of the research subject, with no limitations on the scope of the

research and kind of responses of participant's (Collis & Hussey, 2003). This method emphasises the participation of researchers to be active in the research (Creswell, 2005). In this study, as a researcher assumed the primary role in data gathering and translate data findings, the qualitative method applied in this study was structured interviews and analysis the know the outcome. The constant comparative method has been used to analyse data and detect the project leader's perceptions and experiences with applying the software (Glaser & Strauss, 1967). Some researchers state that the backed the importance of interviews by stating, "I interview because I am interested in other people's stories. Telling stories is essentially a meaning-making process. When people tell stories, they select details of their experience from their stream of consciousness". The importance of interviewing the leaders who worked on this project to identify the different software made. Based on this, I choose the interview method as an essential data collection vehicle. Thus, to ensure the reliability interviews must be driven carefully.

In this research, I interviewed the project director of Salford University and Project Controller from Al Mafraq JWC. The process of interview is a dialogue among the interviewer and the interviewee, where, the questions asked by the interviewer and responded through the interviewee accordingly (Esterberg, 2002). Interviewees have been selected for two reasons. First, they have knowledgeable about the best project content. Second, they supervised the implementation process and feedback from users. Two main elements must be established while conducting interviews, trust and relationships: "The purpose of interviewing is to find out what is on someone's mind. We interview people to learn those things we can't observe" (Patton, 1980, p. 196). Two mutual practices need to be preferred during the interview process, being an active listener and non-judgmentally. Some patterns have been characterised by Esterberg (2002) for comprehensive and specific

questions such as posit “open-ended” questions. As the researcher, I had a good relation with the interviewee who helps the process go smoothly and allowed for an optimal interviewing atmosphere. This section addressed the interviews process and analysing responses from the interviewee. Furthermore, the findings from interviews about implementation process for the software system and the way the results impact on their daily practices.

Interviews and Data Analysis

There were two reasons forced us for applying an interview method as a main source of data for measuring the software usage. First, a qualitative interviewing is suitably used when “studying people’s understanding of the meaning in their lived world” (Kvale, 1996, p. 105). Second, different researchers’¹ states that interviews open scope are when the information triangulate acquired from different sources and raises the truthfulness of results. After participant accept to be interviewed, the interviews have been audio recorded to guarantee precise transcription. Along with the audio recorded, taken notes through each interview, that allows me to follow the main points to highlight ideas and later review. Firstly, I introduced myself to build a good relationship and trust (Patton, 1980). I started the interview process by reminding participants of the aim and procedures of this research. A structured interview method and orderly group of open-ended questions has been used (Merriam, 2002) to help the participants answer honestly and palpably to questions (Bogdan & Biklen, 2003; Esterberg, 2002; Kvale, 1996). The process of transcription started after the first interview in September 2016. In order to guarantee the transcript accuracy, the transcript was reviewed while listening to the audio. Qualitative analysis can be described as a form of intellectual craftsmanship. The data analysis and coding procedures used in this dissertation research had followed Creswell (2009) and Esterberg

(2002). The process of explicit coding is when “you work intensively with your data, line by line, identifying themes and categories that seem of interest” Esterberg (2002).

Creswell’s (2009) suggested six steps for the process of analysing data.

Step1: Arrange and set up the data for analysis. In this step, the audio interviews have been switched to be a word document transcripts and revised.

Step 2: Observe the outcome data. This step has been aligned with Esterberg’s instructions “get to know your data”. This is a reflection step on inclusive concept that to be obtained a comprehensive sense around the information’s that have been transferred by the participants.

Step 3: Start detailed analysis by using coding process. The material has been organised in segments by following Creswell’s procedure of gathering data as a text and splitting sentences into groups. Then, those groups have been categorized with phrases depending on the language of the participant’s.

Step 4: The coding process has been used to produce a description of categories for analysis. This process has been used in this step to produce codes for the descriptions, and that then drove to producing few numbers of categories. Then, these categories have been analysed to have emerged into a general description.

Step 5: Illustration of theme description in a qualitative narrative. The grow themes sketched into record passages. Thus, the results of participants’ responses emerged logically.

Step 6: Translate the data. The themes which appeared from this research were obtained from my knowledge of using new systems.

2.6 Conclusion

This research illustrates the process of building the system. Section 2 introduced the research methodology of designing the software by collecting data from the juvenile centre and showed the structure and implementation process of the program. The Data collected process after implementation were modelling process and analysing results. section 3. The conclusions, recommendation and future work are introduced section 4.

Chapter 3: Research Methodology

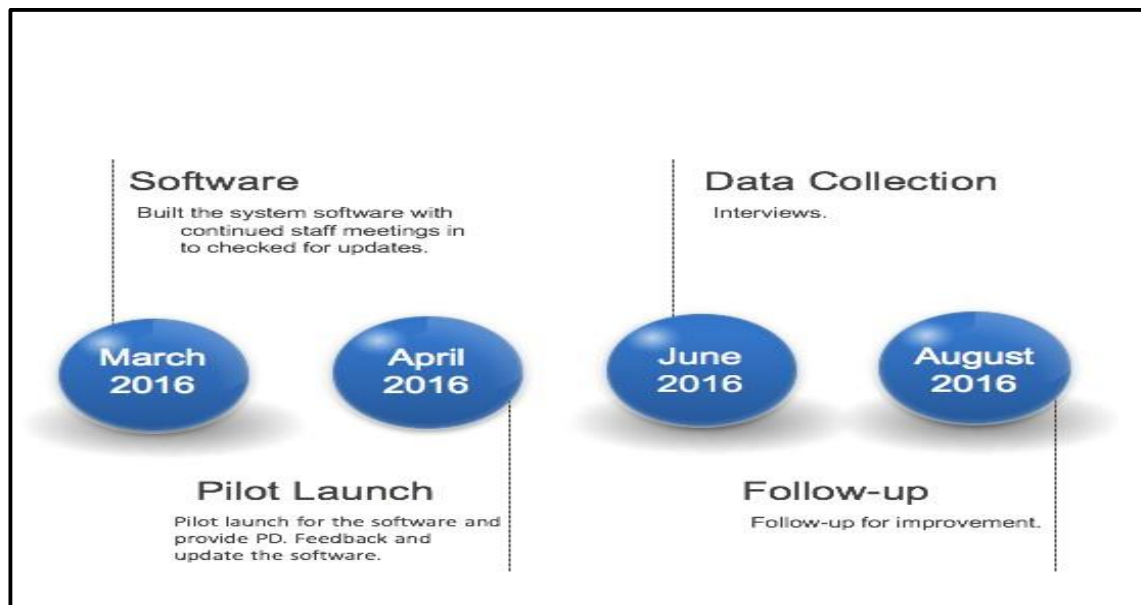
This chapter introduces the methods that have been conducted to investigate the use of a management information software system for juvenile welfare centre in UAE by the staff and to examine the effectiveness of the software system implementation of applying the work streams. Research questions will be highlighted that are intended to be investigated. The research also addresses the data has been collected to measure the software system. Meetings that have been placed on Al Mafraq JWC staff to building the software system process are presented. Demonstrate in details the program structured to explore collected data to build and analysing techniques. Moreover, the chapter detects the relationship between the research questions and the interviews questions whence staff members

3.1 Research Methodology

The objective of this research is to investigate the use of a management information software system for juvenile welfare centre in UAE by the staff and to investigate the effectiveness of the software system implementation of applying the work streams. Recognise how the software system has benefited by the staff to understand the work streams. This would help in allocating the strengths and weaknesses of the software and support the required development infrastructure. Software system provides a framework of whether the staff has benefited or not from the system for thorough understanding of the work streams. An interview method (qualitative method) is used for data collection. Two interviews implemented: one with project director of Salford University and the other one with the head of the implementation coordinator. Interviews are conducted within the centre. Also, a timeline was introduced for the management to agree on the build and implementation process as shown in Figure (1).

Figure 1

Implementation Timeline for Al Mafrq JWC System



3.2 Software System Principles and Experience

3.2.1 Data Collection Towards Building Software System

Five meetings have been engaged in the duration of 3 months before launching the system. At the first meeting, the project manager of Salford University, Al Mafrq JWC project advisor and I attended the meeting. The description work-streams mechanism has been introduced and discussed. Each work stream includes 4 to 8 products. Where each product contains one form filled by the user for each case, independently. This form helps them to follow up with each juvenile case individually. There are two purposes for the system which are, introducing the work-stream to the staff and helping them to fill the forms electronically throughout the system. Also, we had discussed the need of saving data by the user and restored it when needed. All efforts point around keeping the program simple and user-friendly. They came to the conclusion after assessing staff skills. Furthermore, as mentioned earlier, the staff from Salford University were native speakers

where the Al Mafrq JWC Arabic speakers. Therefore, the software necessitates being bilingual (English and Arabic). They handed me the approval documents to start building the system. After the meeting, the documents have been checked by me to make sure all documents were translated correctly and matches work-streams (English and Arabic).

3.3 Software System Structured

In order to build a system, there is the need to follow steps such as the gathering of information, designing, building and testing. High standard design sketches the functions and sub-functions of the software describe the structure notion of data, and the connection between data structure, functions and sub-functions (Fairley, 1985). The system is a set of parts that are coupled together. The JWC system required integrating knowledge of the twelve work streams and design interaction system for implementation. VS considered as one of the best IDEs as professional versions in the market. Three weeks of working had drawn the system character. To meet all requirements, the software was designed by Visual Studio Professional 2013 (VS). The software has related to Microsoft Access 2013, is used to Map the design and save database schemas. VS is a Developer tool use to build a Windows application by using different programming Language. VS allow the developer to control the software output aligned with the database schema design. The form size was 1054 to 727 and auto size locked for Windows Forms Designer. The design was organised regarding the work-streams products. Buttons have been added to help the user move back and forward in the system. Each form connected with Access to store to the database. Comparing between SQL and Access, the question arises which one is the best? And why? SQL is more professional, but because the system is a trial version I'd preferred to use Access. In Access file, the user will not be able to access the schedules without a password. It has been protected. Thus no one can change or delete data without permission

from IT manager. An option of “need help” has been added to help the users in using Access. The Access file has been built in Arabic only regarding the JWC request. The tables are designed to cover all data in the products. Where each table in Access represents one product in the work-stream for both languages (English and Arabic). Each cell in Access is related to each box on the schedule in both English and Arabic. It was connected using C++ programming language. The program has been designed to be user-friendly as well as bilingual.

In the Second meeting, the first edition of the system was presented in front of the Project Manager of Salford University, IT Manager, and the Advisor of Al Mafraq JCW. In this meeting, the proficient of the program has been checked. Some of the options didn't work effectively such as work-stream 4 buttons and the home button. In spite of the fact that, they requested that printing and searching options be added. During the meeting, the approval from the head office in Abu Dhabi Police has been discussed. Agreed to contact and invite them to another presentation at our next meeting. After the meeting, the challenge was to add the print option within 200 forms individually. Some changes have been made for the Access file for monitor and control. In this step, a user ID option has been added to the access file. For confidentiality purpose, only managers had the user ID and password. Although, the search option allow user find and adjust data, which was carried out by managers only.

In the third meeting, the program was presented by me to the HOD of the IT department in the Police. Also, the Project Manager of Salford University, IT Manager, and the Advisor of Al Mafraq JCW were among the attendees. In the presentation, I went through the program and showed the perfect workflow in both languages. The user can use the system in both languages has been requested. I designed the system to

illustrate simplicity in the program by not complicating the products. It has been pointed out that this decision was taken depending on the staff level of IT knowledge. To verify the validity of the program, an example was made. A case has been proposed, and the process was made by classifying the case in its category, then started the procedure by choosing the product that matches the case, filled the form, saved data and printed (cannot mention the example for confidentiality). This example was carried out to show the effectiveness of transferring knowledge and saving data.

The HOD was pleased with the results. He encouraged IT Manager and the Advisor of Al Mafraq JCW to send him their feedbacks. Question and answer time was allocated after the presentation. The HOD started his discussion by asking about the copyrights. We did clarify that I did waived the copyright for the benefit of JWC. He decided to change the police logo for a better and clearer one. Also, he queried about the reason for using Microsoft Access and C++ as a programming language instead of JAVA. I explained that, as this is a pilot program, the centre is going to start with about 400 cases. This led us to agree on using Microsoft Access and C++ as a programming language.

He was happy to offer that after a year of launching the system to upgrade it to JAVA and apply it for the rest three centres across UAE in the future, the centre later provided the official logo.

In the fourth meeting, the IT Manager of JCW called the meeting. He requested I add an application work-streams. It is a twelve work-stream not connected to the described work-streams. The application work-stream concentrated on the process of assessing and recognising products. These products represent the heart of the twelve work-streams and the whole project. After the meeting, JWC provided me with the

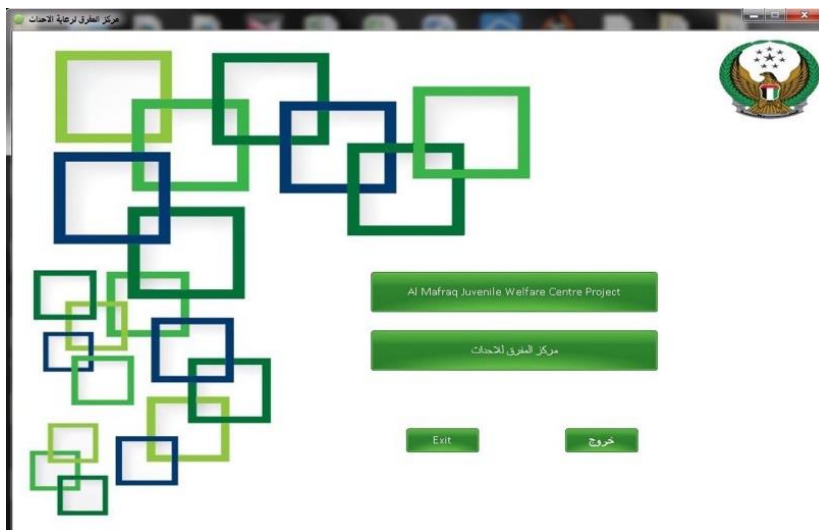
approval documents which were 358 products Sort in 12 work-streams. By using the same methodology of work-stream description, the applied work-stream was arranged in bilingual order. After the user identifies the juvenile case, they will choose the correct product either in English or Arabic. Then, after choosing the product, the user will fill the form and print it. The data in the application work-streams are not going to be saved in Access. This stage was to help staff acknowledge the products. A few changes were made to the interface. The background became white with 3D buttons.

3.4 Overview of Software System

The software system overwhelming dominant colour was green regarding Police Office logo colour. The front-page was design in both English and Arabic languages. The green squares represent the connection between work-streams.

Figure 2

Main Page of Al Mafraq JWC

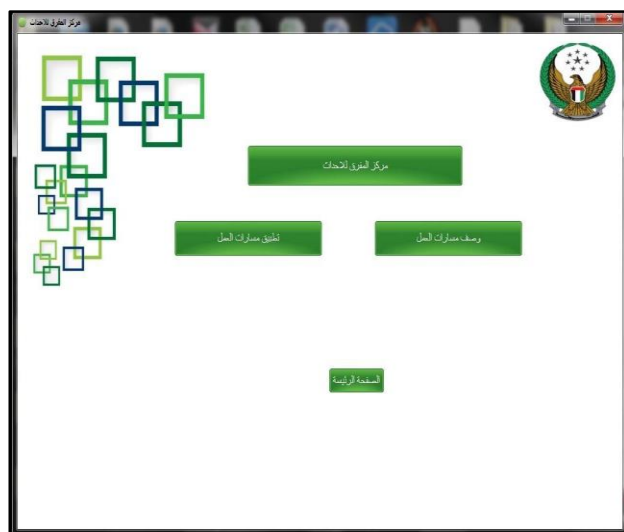
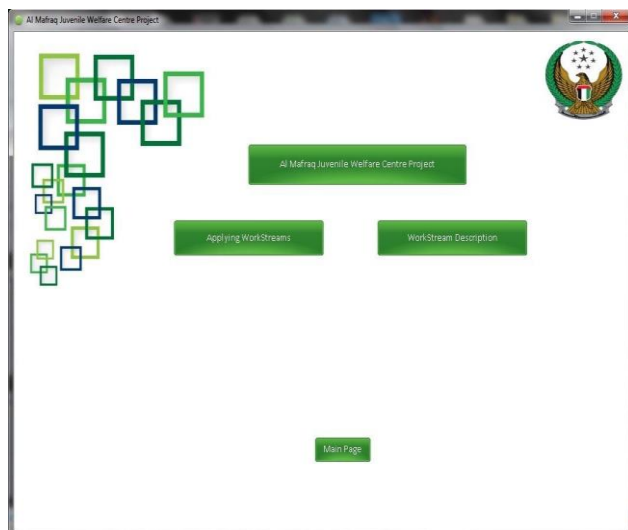


The system divided into two sections, work streams description and applying work streams. The purpose of the two sections was to help specific groups of staff in JWC

acknowledge, use and apply the twelve work streams. In spite of the fact that, transfer paperwork to electronic with saved database.

Figure 3

Work Streams Sections (description and applying)



The work stream description contains details of each twelve work-streams. Each work stream includes multiple products (Figure 4).

Figure 4

Twelve Description Work Streams





The product description was divided into the title of the product, the purpose of the product, compositions, designing and appearance, required skills for the quality criteria. The user identifies the required product, and by clicking on the product, the user can take a look at the product and read the product description (Figure 5

Figure 5

Product Description for Each Work Stream

Quality Assurance Plan

Revision History

Revision date	Previous revision date	Summary of Changes (Give brief notes on reason for changing this document)
2015 , ديسمبر , 21	2015 , ديسمبر , 21	

Approvals

This document requires the following approvals. Signed approval forms are filed in the Quality section of the project file

Name	Signature	Title	Date of Issue	Version
			2015 , ديسمبر , 21	1
			2015 , ديسمبر , 21	1
			2015 , ديسمبر , 21	1
			2015 , ديسمبر , 21	1

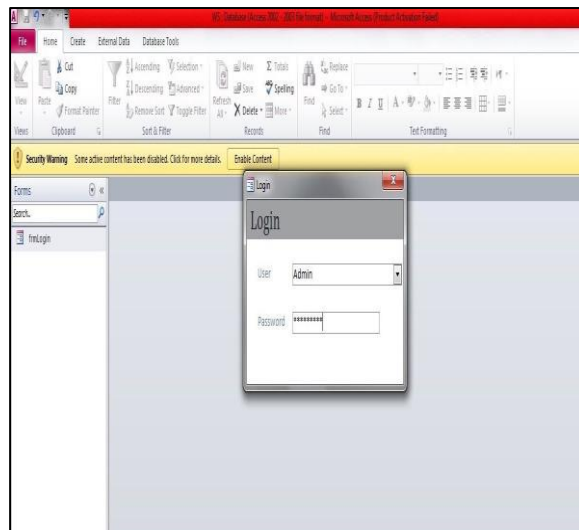
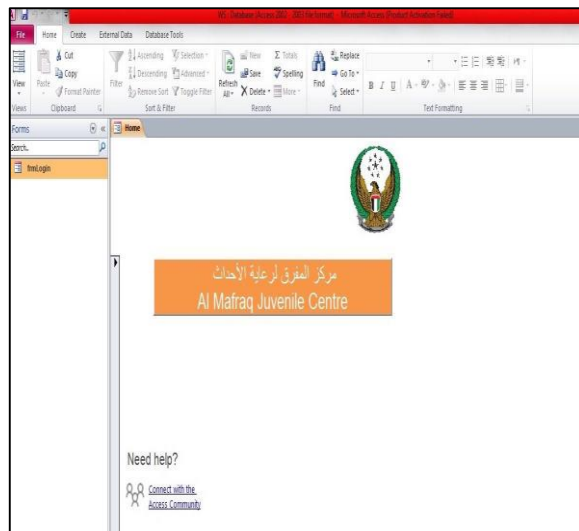
Distribution

This document has been distributed to

Name	Title	Date of Issue	Version
		2015 , ديسمبر , 21	1

Print Work Stream 1 Work Streams

After that, the user decides the case relevant to the description. The user will fill the schedule of the product where; all data is going to be saved in Access. The user is expected to identify the approvals by writing the name, signature, job title, date of issue and the version. The user also needs to show that the document was distributed to the name, job title data of issue and the version of the schedule. Access will create a unique ID number automatically for each schedule. The user can either print or save the schedule (Figure 6).

Figure 7*Main Page for the Access File*

Each table represents one product of each work-streams for both languages.

Figure 8*Work Streams Product Data*

ID	تاريخ المراجعة	تاريخ المراجعة السابقة	ملخص التغييرات	الإسم المصادق	التوقيع	المصمم الوظيفة	الإصدار
ID9T3	New						
WS4612							
WS4613							
WS4614							
WS4615							
WS4616							
WS4617							
WS4618							
WS4619							
WS4711							
WS4712							
WS4811							
WS4812							
WS4813							
WS4814							
WS4815							
WS4816							
WS4817							
WS4818							

For the application work-streams section, this part the practical part of the twelve work streams descriptions. The Applying work streams section has been presented in bilingual. This section can't be aligned with the work-streams description because focused on the process of assessing and recognising forms (Figure 9.

Figure 9*Application Work Stream*

The user is to select the work-stream after recognising the case. The user will choose the product then would be lead to a word document to fill and print it. This section is not related to the Access database. In this way, the user can move to the home page by clicking on the Main page (Figure 10).

in the centre. In this phase, the advisors worked on English section of the program. Also, discussed the need to provide the necessary support software (such as access).

Second phase: two copies software system was submitted to the Project Director of Salford University and IT department in the centre. The IT department worked on uploading the software system across the centre.

3.5.1 Research Questions

To investigate the use of a management information software system for juvenile welfare centre in UAE by the staff and to investigate the effectiveness of the software system implementation of applying the work streams, the next research questions need to be examined:

Q1: How much did the software tool introduce in April 2016 impact on the daily routines of JWC staff?

Q2: Does the system support the main project of the centre?

Q3: Is there any significant difference amongst the staff towards the use of software system concerning their knowledge in work-streams?

Q4: Does the system improve sharing data and information?

3.5.2 Interviews Structure

The interviews are designed per the requirements of the software system implementation. The interview questions were prepared and ordered by the researcher of this study. The literature review highlights the purpose of using the qualitative method and clarifies research steps of analysing data. The interview questions prepared in the English language as hub language for better understanding by the interviewees. On the contrary, the implementation coordinator felt more comfortable in answering in Arabic. In the rest of this section, the relationship between the interview and research questions are discussed.

3.5.3 Analysing Interview Data

The interview questions consist of 20 questions that are sorted out based on the project implementations. Appendix A display sample of the interview questions. The first question was about the role of the interviewee in implementing system software. Coding method has been carried out toward analysing data. The next 8 questions represent the software workflow of the project.

Table 1

Staff Members Towards the Use of JWC Software System

Transactional leadership	Transformational leadership
Can you tell me about your role in conducting the software?	Collect data. Ensure objectives are met. Manage efficiency and effectiveness.
Why do you think this software would be useful to the project?	Contains all necessary info to implement programme. Eliminate user error and train employees.
Does the process of implementation meet the project needs?	Complemented team efforts and was a finalised version. Yes, easy and contains needed sources.
How do you describe your experience after implementing the software?	Easy to use. Effective. Practical. Provides sources.
Are there unique challenges in implementing the	Changing from paper to software.

software?	Selling software useful to staff. Staff reluctance or pushback. Systematising the process. Usability between employees of various education levels.
Do you think the software worked well? And why?	Yes, but not all member. Yes, eliminate paper waste. Yes, a great resource for new and current staff. Yes, improves quality. Yes, provides support and saves time. Yes, streamlined source of information.
How is the software, directly and indirectly, meeting specific needs or lowering barriers to action?	Accessible work streams. Helped develop the work. Need increased accessibility for external team members. Specifically, helpful for certain groups.
How much would you agree with the useful help you received from the software?	Agree, strongly agree
What did you like best about the program?	Accessible. Mobile. Project documentation and history. Streamlined work

From question 10 to 15 discuss the extent of the user benefit from the system.

Table 2

Staff Members Towards the Use of JWC Software System

Questions description	Codes
Does the impact of the software vary by software users' age, gender, or technology experience?	Can be used by everyone.
Do you think the users' skill has been improved in searching and using necessary information after the implementation process?	Users have developed skills with the use of the software.
Did users feel more confident in the self-management in switching from paperwork to the technology?	The benefit to the work needs to be standard. Yes, easy to adjust.
Did the understanding of the project increase after implementing the software?	Increased understanding of software and project
Did the software change users (knowledge, attitude, behaviour, or condition) regarding the project knowledge?	Change in awareness Changes in behaviours Changes in skills
Did all targeted groups benefit from the software or only specific subgroups?	Benefited everyone

The rest of questions discuss the range of system effectiveness.

Table 3*The Relationship Between the Research Questions and Staff Interviews*

Questions description	Codes
How would you improve the program?	Software improved quality of programme. Electronic documentation and communication. Unification of models.
Assess the program about objectives.	Completely electronic. Database. Forms.
Do you think the software has been used effectively?	Tracks work streams easily.
Does the software improve the quality of project?	Effectiveness depends on the target group. Yes, achieved desired results.
Does the software design in a user-friendly way? If yes, in which way you think bilingual method helps users?	The bilingual method worked for both parties. Keep it simple.

3.6 Links Between Research and Interview Questions

From the data analysis regarding staff members towards the use of JWC software system, the table below shows the relationship between the research and interview questions.

Table 4

The Relationship Between the Research Questions and Staff Interview

RQs	Items																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Q1		√	X	√	√	√	√	√			√	√	√	√	√		X	√	√	√
Q2	X	X	√	√	√	√	√	√	X	X	√	√	√	√	√	X	X	√	√	√
Q3		√	X	√	√	√	√	√			√	√	√	√	√		√	√	√	√
Q4		√	X	√	√	√	√	√			√	√	√	√	√		X	√	√	√

3.7 Summary

This chapter introduces the methods that have been conducted to investigate the use of a management information software system for juvenile welfare centre in UAE by the staff and to examine the effectiveness of the software system implementation of applying the work streams. The methodology was flawed in this research, and its qualitative methods based on posing structured questions. The data was collected by interviewing two staff from the centre that played the main role in conducting the software. The interview questions have been described and analysed on the coding system. The relationships between the interview questions and research questions concerning the staff are illustrated.

Chapter 4: Findings and Discussions

This chapter states the findings of implementing software system in the juvenile centre through analysing interviews data. The chapter will address in detail the way staff interviews were analysed. The independent and dependents variables are demonstrated. This shows the study questions have been answered

4.1 Staff Data Analysis

An interview has been done with the project director and implementation coordinator in Al Mafraq JWC in the United Arab Emirates (UAE). A one-on-one conversation has proceeded with the interviewee. We asked questions, and the interviewee responded, with participants taking turns talking.

4.2 Finding and Results

Nvivo software program was used to collect and label texts into categories. Nvivo allows coding the text into nodes. Nodes considered as themes that each part of raw data can be worked-through. When the data are coded, the themes are arranged into categories and relationships are identified. This process responds with the qualitative data analysis requirements that depend upon continual reflection process, inquire analytical questions, taking notes or keeping and reflecting memos and making interpretations (Cresswell, 2009, p. 184).

The purpose of this research was to examine the staff experience in using new technology to apply new project. So, the interviews were recorded, noted and analysed using Nvivo qualitative data analysis software

4.2.1 Main Finding

- Software system orientation

The interviews revealed that the software system was useful as a starting point

for the project. In this stage, the software worked as a knowledge system for staff to help them in acknowledging and implementing work-streams in the centre. Revising the software helped in supporting the implementation stage. The overall software design served the supplication process by containing all necessary sources that employees needed during the project. From that, we can reason that the orientation of the system has been met.

- Staff involvements

The system aim has been met as to the interviewee. Where there was a limited overlap between the system orientation and staff use. Not everyone used the software only those convinced used it. They felt the reluctance to use it because of the lack of background. Also, the system was not used for the purpose mainly planned but was used to share and gather knowledgeable information about it, and that is considered as one of the gap in the implementation process.

- Systematizing the process

Convincing the staff that efficiency of system in daily routine and speeding up the implementation process considered as one of the issues that were identified. Also, refusing to change their low level of technology knowledge was a challenge. These issues were handicapped in allowing all staff to use the software system.

- Work-stream accessibility

Both interviewees agreed on accessibility and free mobility to access required work- streams and ease of use according to different levels of users. The software is differentiated regarding the user level of technology and work-streams divisions. According to the project director, not all the employees can use the software and that some of the staff do not want to work with IT at all.

- Unification of models

The project work-streams information has been unified and through online documentation whereas previous work used paperwork and handwriting. It helps new employees to get a quicker overview of the system in the centre and acknowledge the history of the project.

- Quality Excellence

The characteristics and role of the system were high as staff needs intensive training to reach the target IT level. Also, it is being used by leaders who lead the implementation and those 5 or 6 people, and they are using it on a daily basis. The software starts as simple regarding the users in IT skills where the software needs to be upgraded. The software should be upgraded so as to save more than 400 cases in access also to be able to link it to police headquarter.

4.3 Research Questions' Analysis

Q1: How much the software tool introduced in April 2016 impact on the daily routines of JWC staff?

The software system played the main role in introducing the project to all the staff in the centre where the level of impact didn't meet the expectation of leaders. Many limitations were served as a barrier for full implementation such as: IT knowledge, reluctance and accessibility. These made achieving the desired outcome difficult.

Q2: Does the system support the main project of the centre?

The system software supports the project idea by providing main source of work-stream. This helped in achieving the main goal of the software. However, the software considered on a basic level is needed to be upgraded in the future.

Q3: Is there any significant difference among the staff towards the use of software

system concerning their knowledge in work-streams?

There were differences in usage of IT and career position. For example: A social worker and a physiological worker using the software system more often than other employers in the centre. This takes us back to the way of the job and the need to begin implementing the work-streams.

Q4: Does the system improve sharing data and information?

The system idea was to share information and data across centres. The system improves sharing data but in a limited manner. The limitation effect on the implementation and user's attitudes is in a negative way.

4.4 Conclusion

In this chapter, the qualitative data was collected by conducting interviews. The qualitative data interviews have been analysed using Nvivo software. The interview questions were coded and presented. The research questions answered via Nvivo software.

Chapter 5: Conclusion and Future Work

5.1 Conclusion

This research has evolved and empirically assessing a software system for meditation a work-streams to facilitate the organisation workflow. Despite the fact that, to identify the categories of knowledge and operation processes to map and understand the centre knowledge environment. This system has been applied in worldwide juvenile centres to track youth education, health and many other areas. In UAE, it is a system can move from paperwork to use technology. Also, save data of juveniles and knowledge of work stream to be used by the staff. This system facilitates different areas in the centre, first, it provides the centre with conceptual categories (content, structure and access) for recognising and characterising the system in a way that richly captures the determining features and can be applied to various types of systems of police settings. Second, the system has been delineated the features of future steps concerning improving the quality of indexing data and accessibility of their content.

In a literature review, the juvenile centres' systems have been applied in worldwide where there were not being implemented and covered in UAE. This has been motivated us to build a system can meet needs of a new project for juveniles.

To know the full picture of applying the software system usage by juvenile centre staff, some interviews have been conducted with the project director and project coordinator. The data that has been collected analysed by using Nvivo qualitative software package. By analysing the data, efficiency of the system in daily routine and speeding up the implementation process considered as one of the issues that have been identified. Where accessibility and free mobility to access required work streams and ease of use according to different levels of users and the software is differentiated

regarding the user level of technology and work-streams divisions. Also, according to the project director, not all the employees fully use the software and that reference to someone of the staff does not work with IT at all. The characteristics and role of the system were high and still the staffs need intensive training to reach the target it level. By answering the research questions, findings indicated a significant improvement in staff knowledge of work streams project in the centre. Findings showed the impact of moving from paper to technology.

The overall outcome of the project is inconclusive due to the limited number of people that tested the platform. There is a need to educate staffs more on the necessity of using technological software's to make work easy and to progress in this dispensation. However, the software system can provide a faster and more efficient work-stream between value centres. The project is capable of handling and storing huge data and for making the application process a fast, reliable and convenient means rather than the old paper style.

5.2 Recommendation and Future Work

The next step in the developing the software system is to upgrade it to Oracle system. This would help in expanding the memory system to help the centre in saving more than 400 data inputs of juvenile information. Also, that would allow improving the system's effects on specific tasks such moving from office word for some document to be filled and save on the database of the software system. Connecting the system to the main police office would help in communications at the organisation.

Another avenue of recommendation is to add more other areas of juvenile life for the software system such as health and education path. This would support other organisations to identify and help juvenile in their future steps. Regarding to the data

collection, apply more interviews and surveys for the management and staff in the centre to inform next steps.

This research and software are the first steps in reconceptualising and empirically examining organisational technology to meet with Abu Dhabi Vision 2030. Further development and research are needed to improve such of systems to be used in facilitating juvenile life.

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Appendices

Appendix A

Select Quotes from Interviews Answers Discussions.

Can you tell me about your role in conducting the software?
“We want to develop software that served as a tool to provide employees for purposes of information also to use the tool to acutely collect store and share the data with the colleagues”
“provide an environment for the employee or a platform where all the policies and procedures that Related to the courses of work and exits developed by this project by the University of Salford”
“The employee to enter the program and can access and view all policies and procedures. Also, can access the forms needed from the work streams”
Why do you think this software would be useful to the project?
“They didn’t use data, didn’t know how to collect data, and they didn’t have a tool were for an example record interviews for juvenile or they could share information with each other”
“The program objective is to provide the platform for employees so that they could implement these policies. The work streams provide forms related to each course of work. System provided all the information needed by the employees to implement their work and facilitated the process”
Does the process of implementation meet the project needs?
“So, that’s why I think the software 100% met the projects need. That’s because we revised the tool before it was implemented”
“Yes, the implementation of policies, procedures and mechanisms of the objectives of the project”
“The program is easy to be used, where can be used by all employees with different levels of education and grades in the centre”
How do you describe your experience after implementing the software?
“I think the biggest challenge for the employees was to start using software rather than just papers”.
“they are not just using systemise process where whatever they do at work whatever content they have for juvenile or information they gather they don’t have to write it down and to put it in a system.”
“Gather all the workflows into a single platform has been speeded up the implementation process where the employee had no longer depends on his colleague or manager”
“helped greatly in eliminating papers used, which also contributes to protect the

environment and facilitate the project implementation process”
Are there unique challenges in implementing the software?
“The challenges we have faced are the educational level of some employees as they have difficulty in using the system. Which led to the organise workshops to train them on the use of the system”
“Since the design of the program is easy and simple, allowed different level of staff in education to access it easily”
“the software does not only serve as a work tool; the software also serve as an information platform for certain work-streams that is implemented”
“From all the information they can ask their colleagues how do I use the software now so other than 20 tonnes of papers not knowing where to get information from, we now have unique software that specifies the centre and meet their needs where all information can be found in one spot.”
Do you think the software worked well? And why?
“The program is linked to specific needs. One of the needs that the software provided is accessible to the work streams, which is the main objective, and that to apply it after being developed in the previous stages. In general, it helped in developing the work”.
“The barrier I think is we need to have some time to gather evidence then show the system is efficient and work. Once we have this positive evidence I think the burrier will become lower and the people who resist to using it can train others and fresh memories and use it. The good thing about this software is it possible to be revised it again and people get feedback for it.”
How is the software, directly and indirectly, meeting specific needs or lowering barriers to action?
“I agree that the program has provided many services, including providing the staff with a platform for work streams previously developed and linked them to an existing work stream and comparing them”
“For various reasons, one of them already mentioned, for the first time the centre had a unique platform and information is available for every employee via intranet it has not been done before, and that is crucial. The other thing is unique application tool where people can if they take a decision to choose it is very easy to gather information stored without limitation and using only paperwork.”
“If people decide to use it more often it will be very powerful software in the long term.”
How much would you agree that the services you received were useful? (Strongly agree, agree, disagree, or strongly disagree).
“The thing I liked most in this program is its accessibility and free mobility to access required work streams and ease of use according to different levels of users.”

“So, anyone who wants information about certain work-stream can find it up-to-date, organised and to the point and verified. The person can go to the work-stream and look at the history of it, the information about the work-stream and finds the sheet necessary to do interviews, tests and risk assessment all this information is there which is efficient for work and in a highly effective way for people to understand and have access to the information”
“Do people use all the form that in the software (open the software, open the work-stream, fill the form, print it or save it) at this point no. Where the software, of course, able to do this. The employee not at the point where able to fully use the software. Hopefully, they will be in near future”
What did you like best about the program?
“The program provided the opportunity to be used by all employees with the variety of their skills and educational background because the program characterises in being easy”.
“Definitely yes, we have people at the centre don’t work with IT at all. We have people at the centre who are not sophisticated or educated as filling forms where they should read and write. So, that certainly impact how much they use the software but most people I’d say have access to the laptop and to use IT on the regular basis is also to use this software. “
Does the impact of the software vary by software users’ age, gender, or technology experience?
“Yes, employees could develop their skills in using technology, where some employees did not use the computer for a long time, and raise awareness of the programs that are implemented within the centre. And their application to work has become better.”
“I think as we mention before the big positive is user-friendly software. So, you don’t need much skill to use it. Weather, using the tool has the influence other IT skills or improved their software skills in general, I don’t know”
Do you think the users their skills have been improved in searching and using necessary information after the implementation process?
“Of course, the staff exposure difficulties in applying it because they did not use the computer in the past but I think the staff got to the stage easily.”
“I don’t know if they feel more confident, I think because of implement in a workplace they see it as a job, and they think about I have this software now and I do everything on the computer because we currently don’t have the possibility to share it online with people so we can store it, print it and they can share it.”
“The people who use it they think it is a significant benefit but for people who paused and like to do it in their ways and my manager didn’t ask me to do it in any other way they are just observing now. “
“It’s back to the centre to make it mandatory for everyone or not”

Did users feel more confident in the self-management in switching from paperwork to the technology?
“Yes, it contributed in raised the employee’s awareness and acknowledge about the project”
“The knowledge level and the understanding the exiting and useful of the software increased. Because we pushed it so, as long we were there everyone in the centre asked to use it for us to report, so we did make it.”
Did the understanding of the project increase after implementing the software?
“Contributed in changing the employee’s behaviours and views, through reading the work streams. It works on changing the performance of employees, their awareness and understanding of the procedures, understanding and procedures of policies and deal with different children inside the centre”
“Absolutely, because I believe the implementation of the software for the very first time many employees one their own time understood what we are doing”
“software give them the opportunity to look and gather information in Arabic and English so they can go both ways particularly for people who are not very knowledgeable in English they have all documents in Arabic to become knowledgeable”
Did the software change users (knowledge, attitude, behaviour, or condition) regarding the project knowledge?
“All staff benefited from the software. The program served everyone to unify the common understanding but served the department responsible for applying the work streams”
“Don’t think the software made it for specific groups. It is made to be available for everyone. Via the intranet, everyone at the centre has the access to the software if they want but not everyone has the access to all the information.”
Did all target it groups benefit from the software or only specific subgroups?
“Yes, the software has been contributed in developed the quality of work through the unification of the models used and documentation through the computer where previously was used papers work and handwriting, which sometimes lead to difficulty in reading.”
“Yes, was vital for the project because I wanted to have digital software to leave a footprint where every staff still working there or newly employed can see the history of the project and access to all work-streams.”
Does the software improve the quality of project?
“Enter the forms and save completed data within the program. Develop the software to have a database.”
“I will try to make it completely paperless. Which is possible for the software but it need a lot of time for the centre to understand it to make the tool completely efficient everyone

needs intensive training to use it online and work with iPad?”
How would you improve the program?
“Enter the forms and save completed data within the program. Develop the software to have a database.”
“I will try to make it completely paperless. Which is possible for the software but it need a lot of time for the centre to understand it to make the tool completely efficient everyone needs intensive training to use it online and work with iPad?”
Assess the program about objectives.
“Yes, achieve the desired goals by providing an easy and simple program. So, it can be used and tracks the work streams in a simple and easy way.”
Do you think the software has been used effectively?
“I believe that the program has been used effectively and can be developed and improved. At this stage, it can be said that it achieved the desired results.”
“You need to consider the target group and who we want to use it. For the people, we introduce to, and we have two groups: the ones who lead the implementation and those 5 or 6 people and they are using it on a daily basis. And the other group who supposed to be trained by these leaders they are properly not using it as much”
Does the software design in a friendly user? If yes, in which way you think bilingual method helps users?
“The program was developed in both Arabic and English. Most of the staff spoke Arabic, and there was also non-Arabic speakers’ staff. The program provided a platform for non-Arabic speakers to access and use these work streams. Educate employees and help them work faster and meet their views”
“The fact the software has been designed as a friendly user bilingual was the success of the software. So, if we had most of the employees had very limited of English, and we apply the software only in English that would be failed purely for language reasons. We are aware we can make it much more complicated and add many more applications but to convince people to use it needs to keep it simple at this point, and we must pick up the users in their IT skills to get them use it.”